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No. 182

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I. GENERAL INFORMATION

PRACTICAL RESULTS STRESSED IN SCIENTIFIC RESEARCH WORK

Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 25 Sep 81 pp 107-110

[Article by Zhang Qinghe [1728 3237 3109] of the Chinese Agricultural Mechanization Sciences Research Academy: "Scientific Research Must Stress the 'Survival Rate' of the Achievements"]

[Text] Scientific research is an important means for man to change the unknown to the known and to change hopes into reality during the course of understanding and reforming nature. To realize the great task of the "four modernizations," scientific research must be strengthened. Based on this, Comrade Deng Xiaoping correctly pointed out at the party Central Working Conference that scientific education must continue to develop as much as possible.

At the same time, in scientific research, attention must be paid to spending less money and doing more work and doing the work well. This is a principle in socialist construction that must be insisted upon from the beginning to the end. During the period of economic readjustment, insisting on this principle is especially important.

In order to spend less money, do more work and do the work well in scientific research, a lot of practical work must be done. One way is to pay a lot of attention to increasing the "survival rate" of scientific research achievements. What is the "survival rate" of scientific research achievements? I believe that in applied science, it is the proportion of scientific research achievements used in production (and welcomed by the users) that become a direct productive force.

The importance of this problem is obvious. The higher the survival rate of scientific research, the less the number of "blind alleys." Conversely, the lower the survival rate of the achievements, the more "blind alleys" there are. "Blind alleys" are a great waste in a nation with limited (scientific and technical), manpower, financial strength and materials.

Let us look at statistical data from the Agricultural Machinery Ministry: From 1972 to 1978, a total of 340 kinds of new agricultural machinery products (achievements) were successfully developed throughout the nation. Among them, 131 entered into production, constituting 39 percent. There were 160 products that did not enter into production, constituting 47 percent. There were 49 products in an ambiguous status (basically they did not enter into production), constituting 14 percent. Among the 131 new products that entered into production, production of 33 was forced to stop after production began because of poor performance, low quality, because they were not durable, because their accessory farm tools were not complete, because they did not meet the market demands, and because nobody ordered them and they did not have any market. At present, only 98 products are still being produced, constituting only 28.8 percent of the total number of successfully developed products (achievements). Of course, scientific research itself is an exploration; it may succeed or it may fail; "to develop one item, to be successful in one item, to use one item" may be a demand that is too leftist. But we all hope that scientific research achievements can be used in production and that the ratio of them becoming direct productive forces can be higher.

Then, does the possibility of establishing the "survival rate" of scientific research achievements exist? The answer is affirmative. This requires conscientiously doing the following tasks well.

1. Selection of the topics must be based on "need."

To the entire nation, research in basic theory cannot be neglected because it is the foundation to further elevate the level of science and technology. To the units involved in research in applied science, the major efforts should be to develop products urgently needed in production to serve the development of the national economy. It should be said that this is the inherent duty of the units engaging in research in applied science. To disregard the urgent needs of production and bury oneself in the study of theory is either to misunderstand the true nature of "scientific research should walk ahead of production" or an illness of "being aloof from mundane affairs" that is totally separated from what is practical.

Production needs its objective foundations. To clearly understand the needs of production, the scope and true and false needs must be clearly understood. Except for individual situations, it is necessary to aim the major efforts of scientific research at serving the needs of large area production. Some problems proposed by the production sector may seem necessary at the time, but they may not necessarily have to be solved immediately because some are "false needs." For example, interplanting and companion planting in agriculture were very popular several years ago in northern China. People have different opinions regarding the actual results of such farming techniques. Some say their effect of increased yield is visible, some say their effect of increased yield is visible, some say the results are superficial. Before a judgment can be made about such farming techniques, Hubei and Jiangsu developed the highland gap tractor to serve such farming techniques, but after introducing the tractor on the market, it was discovered that the farmers did not urgently need it and nobody asked about it. Thus, before research subjects are selected, the production needs must be determined. Research must not do as it wishes and rush into production. This can only be done by conscientious surveys and analysis.

2. Before the subject is settled, analysis of economic gain must be conducted.

The key to the survival strength of a new product or a new technique is determined by its economic gain. This is especially true in our nation, which has an abundant labor force. For over 20 years, why has the paddy rice transplanter that became well known throughout the world not become popular even now in our own nation (up to 1979, the area of machine transplants throughout the nation was only 1 percent)? Besides the fact that farming techniques and farm machinery are not linked together, the key is that its economic gain is not obvious. Conversely, at present, while the sales of many large and medium items of farm machinery are dropping, the sales of high priced grain combines are rising. What is the reason? This is because economic gain has moved the hearts of the farmers. The farmers are pragmatic. Although they do not calculate as precisely as an electronic calculator, they can still calculate the details in their hearts relying on experience. Buying a Dongfeng-5 mobile grain combine costs 30,000 yuan. Buying a Beijing-2.5 mobile combine costs 13,000 yuan. But the loss in the (wheat) fields through machine harvesting is 2.614 percent less per mu than through manual harvesting, (actual measurements in Yu County, Henan, shows the loss in manual harvesting is 3.432 percent, the loss in machine harvesting is 0.818 percent), i.e., a reduction of 12.904 jin in loss per mu, equivalent to 1.94 yuan. Loss in the fields in ordinary conditions can be reduced by over 1 percent per mu (when encountering overcast and rainy weather and rotting, the reduction of loss can reach over 4 percent), equivalent to 1.2 yuan. Because summer crops are harvested quickly, summer planting and summer management can be carried out in time. Autumn crops can yield 40 to 100 jin more per mu, equivalent to 6 yuan. Each mu can save 10 laborers and conserve an expenditure of 8 yuan. With the improvement in the quality of the food grains harvested by a combine, increased income can be realized. These calculations show that each mu can earn an additional 20 yuan in income. A combine that harvests and threshes in the field can harvest (thresh) 1,000 mu a year, the total increase in value can reach about 20,000 yuan, generally balancing the investment in purchasing a combine. This is why even though the combine is highly priced, farmers are still actively purchasing it.

Therefore, regardless of the research subject, before settling the issue, one must carry out conscientious analysis of economic gain. If economic gain is visible, even if the achievements are not very advanced, the users will buy and use the product. Otherwise, no matter how advanced our achievements are, they will only be "fruitless flowers."

3. In technology, one must "know oneself and know one's enemy."

Military strategists say: "Know yourself and know your enemy, and you will win all battles." This refers to warfare. Actually, it is suitable for every profession. Although scientific research has its mysteries, knowing oneself and knowing one's subject is still very important. In the past, in applied scientific research, for example, in the development of agricultural machinery, such a situation could be frequently seen. A lot of effort is spent on investigation and research, and a lot of materials and a lot of trial production costs are expanded. After experiments, there are many problems and the result is chaotic, the product becomes a piece of waste, and the project ends without results.

This situation occurred mostly because the scientific and technical personnel involved did not know themselves and did not know their subject and they blindly went ahead. In scientific research, "oneself" means the scientific research personnel themselves, whether they are familiar with the research subject, whether they know their own business strength, their level of knowledge, their working experience, whether their means of experimentation (including trial production) are good or bad, etc. The "subject" refers to the research subject, including its difficulty or ease, its degree of complexity or simplicity, its amount of work, its progress, whether it is an invention or an improvement, whether there are previous examples to follow or copy, whether the reference materials are sufficient, etc.

Emphasis on knowing oneself and knowing the subject is to seek truth from facts and to act according to one's strength. In science, one must not cheat. "Catching up and surpassing" are wishes that one should have, but one must not forget oneself in order to catch up and surpass. One must be pragmatic, start out from one's own foundation to contribute what one should do to develop the national economy, to satisfy production needs. Here, I am reminded that some intellectual youths and farmer commune members wrote to me saying they wanted to design a grain combine. This was too far from acting according to one's ability. In agricultural machinery, the combine can be said to be the most complex machinery. If an intellectual youth, a farmer commune member tries to pursue this, the results may not be optimistic, and even if one invests all one owns, it may be very difficult to produce results.

In technology, if one can know oneself and know one's subject, it is possible to obtain twice the results with half the effort in pursuing the research subject one has chosen oneself. Otherwise, setting lofty goals and blindly trying to catch up and surpass may lead to exerting twice the effort but achieving only half the results, and there may not even be any achievements.

4. One must draw up the "plan and task" well.

For a research subject, the "plan and task" are like the combat plan and deployment drawn up by military strategists. There must be goals and demands, analysis of the situation and practical ideas. For the leading scientific and technical management departments, the "plan and task" must be grasped well. They must be conscientiously reviewed. This is an important link in improving the survival rate of the achievements.

"The plan and task" should generally include: the basis for selecting the subject (source), the demands of the goal, the forecast of technical and economic gains, research content and key techniques, the tentative application, method, conditions needed and progress plan for each stage of work. These are all important aspects in reviewing a research project to see whether it should be established or not. Among them, the first three must be subjected to key review.

The method of review is generally carried out at separate levels by the leadership of the research laboratory, the scientific and technical management department and the leadership of the research academies (institutes). When necessary, the persons proposing the subject of the project can submit a question and answer report for the collective to review. Through review, those projects that are the result of wishful thinking, those that are not linked to production needs, those that do not have a predictable economic result or those that can be carried out but are not necessary must be "abandoned" early to avoid any difficult situation after the project has been established and after manpower, materials and capital have been invested and one does not have the courage to terminate the project but one cannot pursue it further. It should be mentioned here that recently some comrades advocated that scientific and technical personnel should be allowed to select the subjects freely. I believe that free selection should also have a limit and requirement, and one should not do as one pleases.

To realize accomplishments, there must be some things that one should not do. Only by "being willing to reluctantly abandon what one loves" and to eliminate those projects that should not be carried out or to eliminate those projects that are not absolutely necessary can one assure the key points, develop the function of the limited (scientific and technical) manpower, capital and materials and effectively increase the survival rate of scientific research achievements. Otherwise, grasping everything at once will necessarily violate one's wishes, rushing things will not produce the desired result; in this way, it is not possible to obtain the scientific research achievements one hopes for and it will be a futile investment of manpower, capital and materials, causing a waste of things that should not be wasted. This means that key subjects must be pursued with concentrated efforts. Concerning this point, some people may say: Chen Jinrui [7115 2529 3387] was only one person but he won the "crown" and realized great achievements. The facts are true. But one must not forget because of this that in science as it has developed to the present time, there are some projects that cannot be achieved by one person, they are even difficult to achieve by one unit. They require the united efforts of society.

5. Appropriate talent must be assigned.

After a subject has been determined, the first major task is to assign appropriate personnel. If the personnel assigned to the project are not appropriate, it will be like sowing a seed in an infertile desert, it will never grow into a rich fruit. Assigning personnel has two considerations: One is "to satisfy his interest," the second is to utilize his abilities. Even if a person's original ability is not too high, if he loves a certain task, he can produce unexpected achievements. Nie Weiping [5119 5898 1627] dominated the game board in Go, Guo Yuehua [6753 6460 5478] took the lead in table tennis, Duan Yuanxing [3008 0337 2502] discovered a new star with his naked eye, Chen Jinrui [7115 2529 3387] became known throughout the world for his achievements in the study of the "Goldbach conjecture"...,their achievements were all the results of their love. In scientific research subjects, personnel must be selected according to the "likes" of scientific and technical personnel. This can be done by having the leadership and the scientific and technical management departments grasp the situation or it can be done by using "examination and recruitment." Using administrative orders to order scientific and technical personnel to study subjects they do not wish to study and contrary to their interests and then carrying out massive ideological work are not an intelligent way to use people. We must "follow their interests" and utilize their talent. This may not be the magic touch in using people but it is the rationale for using people. But it is strange that some of our leading cadres insist on doing the opposite in using people, and as a result, the work is affected. Of course, "talent" is a relative concept. In certain jobs, even though at the beginning a comrade is not familiar with the subject and it may even be his "shortcoming," after a period of involvement, the "shortcoming" may become the "talent" and the work may be done well. This situation cannot become the reason for us to select people by avoiding their talents and using their shortcomings. This only shows that to make the work as stable as possible, we must not order something this year and order something else next year, forcing scientific and technical personnel to take care of one thing and lose the other and waste away their lives. Besides the "interests," the talent and stability mentioned above in selecting personnel responsible for a certain subject, we must also consider the person's organizational ability and his active ability. In particular, he must possess scientific foresight and a rich imagination; he must possess the courage to advance and to make breakthroughs.

6. The technical responsibility system must be strict and clear.

The technical responsibility system is an important aspect of scientific and technical management. Why do some scientific research units have many subjects of study but they do not have visible achievements, spend a lot of money but do not make great contributions? A very important reason is that the technical responsibility system is not sound. After establishing the subject, the subject research group can do what it wants and everyone is happy if achievements are realized, but if a problem occurs, waste is created but nobody takes responsibility. If this situation is not changed, scientific research achievements cannot be plentiful and the survival rate of the achievements cannot be improved.

In carrying out socialist construction, every job should be subjected to clear reward and punishment. Scientific research should not be an exception. To clarify rewards and punishment, the system must be strict and unambiguous. Scientific and technical personnel who work enthusiastically, who produce visible achievements and who contribute greatly toward scientific research should be rewarded. Those scientific and technical personnel who are passive and lazy, who do not produce achievements for many years or who create great waste in scientific research should be punished. The reward and punishment system does not simply govern scientific and technical personnel who are directly involved in such work. That would be unfair. It should at the same time include the technical responsible persons at each level. This requires the establishment of a strict and unambiguous technical responsibility system. There should be clear regulations for the members of the subject research groups and the technical responsible persons at each level covering each link of research, design, trial production, experimentation, evaluation and production of the project, and the responsibilities each must bear. The method of punishment can be the transfer of scientific and technical workers and technical responsible persons. Those who cause serious waste can even be held economically responsible. Only in this way can the sense of responsibility of the technical personnel at each level be strengthened.

7. There must not be hasty evaluations.

When a scientific research subject is about to be completed, it should be evaluated. Technical affirmation and recognition of the project by professionals of the same profession and concerned units are demonstrated through evaluation. The scientific and technical personnel involved in the project will be gratified because of such achievement.

But practice proves that the evaluation of projects, especially the evaluation of products, must not be hasty and rushed through. A popular saying goes: "Melons that are forced to grow are not sweet." When a project is hastily put through evaluation when it is immature, what is obtained will necessarily be a "bitter melon." First, it cannot be used in production, and second, it will cause the scientific and technical personnel to feel that the task has been accomplished and they will relax. For example, among the 160 types of new agricultural machinery products (scientific research achievements) that were successfully developed from 1972 to 1978 but were not produced, 25 were rushed through evaluation and finalized with problems left unsolved to seek quick accomplishments (seedling uprooting machine, combined sowing and planting machine and vertical corn harvester). These new products (scientific research achievements) were not mature, the operating quality was poor, they did not satisfy the demands of the farmers, they were rushed through evaluation and finalized to seek quick accomplishments, and improvement measures had to be taken later during mass production. Actually, good intentions carried the hidden cause of failure. This way of doing things has many shortcomings and few advantages and should be avoided.

With a view to pragmatism, future evaluation of scientific research achievements should not be carried out by mass evaluation. In that way, it is easy to be like "cigarettes and wine that produce momentary glory" and the results will mean the ruin of reputations. Scientific research achievements must be evaluated by science. It is best to hand the achievements over to concerned authoritative scientific research units to carry out scientific evaluation. Scientific and technical examination means the evaluation of the achievement. The decision to produce the result in production or to use it or not will be based on this.

In general, improving the survival rate of scientific research achievements is an important task related to increasing production and conservation, reducing waste so that scientific research can better serve the development of the national economy. It is hoped that this will attract the attention of the leadership at each level, the experts in each sector and the broad number of scientific and technical workers Also, this writer believes that if we conscientiously carry out the seven aspects described above well, the survival rate of scientific research achievements will surely be improved, and the massive amount of manpower, capital and materials invested in scientific research by the state will produce even greater gain.

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UNDERGROUND RESERVOIRS TO SOLVE WATER PROBLEMS EXAMINED

Beijing XIANDAIHUA [MODERNIZATION] in Chinese No 9, 16 Sep 81 p 17

[Article by Zhang Dachang [1728 1129 2490] of the Changchun Geology Academy: "Underground Reservoir"]

[Text] The Difficult Problem of Water Management

Thick limestone strata are widely distributed in the southern part of our nation. Underground water has allowed dissolution caverns to develop on a large scale, forming underground rivers and underground lakes. The underground natural caverns can be blocked to form reservoirs called "hollow underground reservoirs."

Can underground reservoirs be built in the northern plains?

In our nation's North China Plain, the ground is flat and the soil layer is thick, suitable for machine planting and thus favorable to the development of agriculture, but the rainfall is insufficient. The annual rainfall averages only 500 mm, and 60 to 80 percent of the rainfall is concentrated in July and August. Most of the rainwater falls during a brief period, frequently causing floods and damage, and most flows into the sea and is lost. During other days, it is almost arid and there is a lack of water. The extremely uneven distribution in time and space of rainfall over northern China has seriously affected industrial and agricultural production and urban life. How do we build up the advantages and eliminate the disadvantages and solve the problem of water in northern China? It was proposed that dams be built across the Yellow River and that they be linked to a canal network to supplement the deficiency of water. As a result, water accumulated in the plains but did not flow away, the fields were irrigated but the water could not be drained, thus, the underground water level was elevated, causing salinization and swamps over large areas, changing the original "golden land" of food grains production into a "silvery countryside" oozing alkali. Later the embankments had to be blasted away, the canals filled and the project for storing the water of the Yellow River had to be withdrawn.

To build surface reservoirs in the North China Plain would require massive capital investment; furthermore, because of the large amount of evaporation and seepage in ordinary years, water resources would be wasted and the land would be easily damaged by floods and seismic activity.

Facing the difficult problem of water management in northern China, finally a new proposal was made: to manage water by using "porous underground reservoirs."

New Uses of Ancient Rivers

Porous underground reservoirs are built mainly by utilizing the ancient river channels formed underground by the sinking of the earth's crust during geological periods. Ancient river channels have gravel layers with relatively large porosity. The porosity is generally over 20 percent. They are good water storing tectonics. If the ancient riverbeds and the two sides are earth strata that are not permeable by water or are poorly permeable, then the river channels can be "intercepted" at the lower reaches, i.e., by digging and intercepting the ancient river channels and building a clay embankment wall several meters thick, thus forming an underground reservoir. With sufficient water sources for replenishment and good channels for permeation, with sufficient facilities to draw the water and with necessary drainage outlets, the underground water reservoir would be complete.

Construction is simple for building this type of reservoir. It does not destroy farmland, it does not require moving villages and towns, and it does not affect roads and traffic. The cost is only one-tenth that of a surface reservoir of the same scale. Also, it is safe and reliable, there is no cause for fear in connection with earthquakes, there is no fear of it breaking and causing damage. War will not even destroy it. During the rainy season, it can store water automatically or through manual efforts. When necessary, the farmland above the reservoir can be directly irrigated by mechanized wells. Digging canals is not required. It also has a marvelous function: by drawing underground water for irrigation, the water can also wash the soil, reduce salinity and lower the underground water level. This not only can avoid salinization and alkalization of the soil, it can also improve saline and alkaline soil. In addition, underground water can reduce pollution and water temperature remains constant. In summer, it can be used for air conditioning and reducing temperatures, and in winter, it can be used in boilers for boiling water, thus conserving energy.

A Bright Future

It has been estimated that by the year 2000, the shortage of water in the northern China region will be 50 billion cubic meters. To make up this amount, a plan for "transferring southern water to the north" was proposed. This would mean guiding the water of the Changjiang along three routes--an eastern route, a western route and a central route--to the north to irrigate the northern fields. Realization of this plan would require massive construction, and the problems of storing and protecting the water transferred from the south, prevention of salinization and alkalization and the creation of swamps along the way would have to be solved to avoid making the same mistakes as were made in drawing the water of the Yellow River for irrigation. Another estimate is that the water sources in northern China are not deficient and that if the bodies of water could be stored and effectively utilized, then the area would be basically self-sufficient in water. The key is to solve the problem of storing and controlling water resources well.

But regardless of the method, they all require storing and protecting massive bodies of water. The most suitable means of handling this task is the underground water reservoir. In addition, efforts could be combined for draining the silt and sand of the Yellow River and guiding the water thus extracted into the underground water reservoir. This would provide control of the Yellow River and also would utilize the 20 billion cubic meters of water of the Yellow River, killing several birds with one stone. Therefore, exploring and building underground water reservoirs has great significance in the future economic buildup of northern China.

According to the judgment of geological workers, there are relatively numerous well-developed ancient river channels in the northern China region. They provide good conditions for building underground water reservoirs. In recent years, Hebei Province has completed the Nangong underground reservoir, which is 30 meters thick and covers a square and round area of 206 square kilometers. It can irrigate 200,000 mu of farmland and has effectively served in flood prevention and drought resistance. It has provided experience in the building of underground reservoirs in the North China Plain.

Underground reservoirs are a new direction in developing water conservancy in the plains, and the future of water consumption in the northern China region is bright and optimistic.

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ADVANTAGES OF RAPESEED PRODUCTION DESCRIBED

Huanggang HUBEI NONGYE KEXUE in Chinese No 9, Sep 81 pp 20-23

[Article by Zhao Heju [6392 0678 0658], Ma Zhiyong [7456 1807 0516], Li Yingde [2621 5391 1795], and Li Jingshu [2621 6855 2885] of the Oil-Bearing Crops Institute of the Chinese Agricultural Sciences Academy: "Productive Superiority of Rape"]

[Text] This year, the situation of rape production is very good: the nation harvested about 48 million mu of rape and the total yield is estimated at 58 million dan. Hubei Province harvested about 4,282,600 mu of rape and the total yield is estimated at 4,125,600 dan, an increase of 81.17 percent over last year. Future production of rape will continue to develop. This shows the strong superiority of rape production. This article will attempt to explain the inner cause of the development of rape production and its important function in developing agricultural production from the viewpoint of superior performance, characteristics and utilization of rape.

I. Superior Performance of Rape

1. It provides oil.

Vegetable oil is the major edible oil of the people in the southern part of our nation. Oil and fat are important sources of thermal energy for people. The oxidation of 1 gram of fat can produce 9,500 calories of heat, 137.5 percent more than that produced by the oxidation of 1 gram of sugar (4,000 calories), and 72.7 percent more than that of the oxidation of 1 gram of protein (5,500 calories).

In recent years, the development of production of oil-bearing crops in our nation has been rapid: in 1979 the yield was 1.5 times that in 1949. But compared to other major crops, the development has been slow. For example, the national yield of food grains in 1974 was 1.9 times that in 1949, the yield of cotton increased 3.97 times, the yield of sugar crops increased 7.68 times, the number of hogs, cattle, and sheep increased 3.73 times, the yield of aquatic products increased 8.5 times, and the yield of forestry products increased 27.1 times. In Hubei Province, the yield of food grains in 1979 was 2.2 times that in 1949, cotton increased 6.8 times, bast fibers increased 2.7 times, and silk increased 6.6 times, the number of hogs in pens increased 4.5 times, but oil-bearing crops increased only 1.4 times. Also, the level of consumption of edible oil by the people is very low. In 1979, the national per capita share of edible oil was under 4 jin, while that of most nations of the world was 30 jin. Therefore, efforts still must be exerted to develop the production of oil-bearing crops; in particular, the development of rape production is a strategic measure to rapidly increase the level of our nation's production of oil-bearing crops.

2. It increases revenue.

Rape is an economic crop: the income is high and the results are achieved quickly. In 1981, Guangji County in Hubei Province produced a total of 27.6 million jin of rape. Regarding the agricultural population, the average per capita income from rapeseeds is about 25 yuan. In 1981, Chendeyun Brigade of that county produced a total of 301,600 jin of rape and the average per capita income from rapeseeds was 70 yuan. In 1980, the net income per mu from rape in Huagiao Brigade (less investment and wages) was 68.54 yuan, 15.49 yuan more than the total net income of 53.05 yuan from double season paddy rice. A comparison of the triple crops of Raobu Commune in Beiyang County, Jiangxi, showed the per mu income from rice-rice-oil bearing crop was 170 yuan, that from rice-rice-wheat was 135 yuan, that from rice-rice-safflower seeds was 110 yuan. This shows that the economic gain from rape production is high.

In addition, planting rape also promotes the development of industry and sidelines such as bee keeping, processing of oil-bearing crops, and oil chemical industry. Therefore the masses say: "To become rich, rape production must make big strides."

3. It provides sources of fertilizer.

Rape is a crop that utilizes and fertilizes the land. According to analysis by our institute, a per-mu yield of 200 to 300 jin of rape absorbs 10 jin of nitrogen, 3.5 jin of phosphorus, and 9.4 jin of potassium to produce 100 jin of rapeseeds. But the amount of fertilizers returned to the fields is also plentiful (see Table 1).

Table 1. Absorption of the Three Elements by Rape and the Proportion of Each

		Nutritional Elements		
		Nitrogen	Phosphorus	Potassium
Amount absorbed to produce 100 jin of rapeseeds (jin)		10.0	3.5	9.4
The amount absorbed by each part of the plant as a percentage of the total amount absorbed	Rapeseed	44.1	65.9	21.2
	Fallen flowers and leaves	29.1	13.3	29.4
	Roots	5.9	5.8	13.4
	Stems and stalks	13.09	6.04	24.91
	Cuticle	7.81	8.96	11.09

Note: The data in the table are provided by the soil and fertilizer laboratory of the Oil-Bearing Crops Institute unless otherwise noted.

It can be seen from Table 1 that if the stems, stalks and cuticles of rape plants are taken away and not returned to the field, 20.9 percent of nitrogen, 15.0 percent of phosphorus and 36.0 percent of potassium are taken away. But actually, in general, cuticles are returned to the field, so only 13.09 percent of nitrogen, 6.04 percent of phosphorus and 24.91 percent of potassium are taken away. If one-third of the stems are returned to the field, then only 8.73 percent of nitrogen, 4.03 percent of phosphorus and 16.61 percent of potassium are taken away. Wheat crops are different. The fallen flowers and leaves and the roots of wheat returned to the field contains only 26.7 to 46.8 percent of the total amount of nitrogen absorbed, while the remaining 53.2 to 75.3 percent are taken away by the harvest. Therefore the masses say "wheat consumes grains, rape fertilizes the fields."

Table 2. Ratio of the Parts of the Rape Plant and Their Nutritional Content

		Parts of Rape Plant					
		Seeds	Root system	Stalks stems	Fallen leaves	Fallen flowers	Cuticle
Yield of each part (jin/mu)		245.3	190.1	436.3	264.7	27.3	199.0
Proportion of each part in the production of 100 jin of rapeseeds (jin)		100.0	77.5	177.8	107.9	11.1	81.1
Percentage of each part in the stems and stalks			17.02	39.04	23.69	2.44	17.81
Content of three elements in each part (%)	Nitrogen	3.677	0.550	0.453	2.013	1.463	0.550
	Phosphorus	1.902	0.372	0.203	0.327	0.489	0.355
	Potassium	1.543	1.553	1,359	1,846	2.132	1.240

From the proportion of each part of the rape plant (Table 2) we can calculate the amount of fallen flowers and leaves and the stalks and stems of rape plants returning to the fields and the nutritional content. In 1980, the Chendeyun Brigade in Guangji County planted 801 mu of rape, the total yield was 251,500 jin, and the average per mu yield was 314 jin; each mu of rape was awarded the sale of 53.5 jin of chemical fertilizers, producing 213.5 jin of cake fertilizers. Each mu of rape plants produced 942 jin of stalks. Returning one-third to the fields means returning the equivalent of 8.93 jin of ammonium sulphate, 3.97 jin of calcium superphosphate and 7.4 jin of potassium chloride. In addition, each mu has 218.2 jin of fallen leaves and 28.9 jin of fallen flowers; their nutritional content is equivalent to 27.2 jin of ammonium sulphate, 5.05 jin of calcium superphosphate and 7.7 jin of potassium chloride. The total of the two together is equivalent to 36.13 jin of ammonium sulphate, 9.02 jin of calcium superphosphate and 15.1 jin of potassium chloride.

4. It banks fertility of the soil.

Our nation's southern rice regions have long been practicing continuous cropping of double season rice and green manure crops. Secondary gleyization of the soil has occurred, so rotation cropping, changing of the crops and improving the soil structure are needed. In the cotton producing region, because of the overly large area of the double cropping system of cotton and wheat and continuous cropping year after year, the land is overly exhausted and rotation cropping and changing the crops are needed to bank fertility of the land. Rape is a good opening crop in rotation cropping and changing the crops. It has a visible function in improving the soil and banking fertility of the land.

1) The effect upon the physical properties of the soil.

According to analysis by the Zhejiang Province Agricultural Science Academy, in fields planted with a rotation of grass and rape or barley, the content of the soil's water stable granules was high, reaching 38.01 percent; followed by the soil in grass fields planted with a rotation of rape and wheat, 31.12 to 35.76 percent; and the lowest in grass fields of multiple plantings year after year, only 17.81 to 18.23 percent. Also, measurements of the tilth of different winter crops in multiple plantings showed that during spring planting, the plow wall resistance in tilling and upturning of fields of rotation cropping of grass-double season rice-rape (or wheat) was 0.3 kilograms/square centimeter, less than the 0.59 kilograms/square centimeter of the field of continuous cropping of grass-double season rice-grass by 0.29 kilograms. Measurements in winter tilling showed the plow wall resistance in fields of rotation cropping of grass-double season rice-rape was 0.48 kilograms/square centimeter, less than the 0.76 kilograms/square centimeter of fields of continuous cropping of grass-double season rice-grass by 0.28 kilograms.

The Hubei Province Agricultural Sciences Academy measured the fields before overturning of green manure in 1979. The total amount of porosity in the soil of rice fields after planting rape was 4 percent more than that in the soil of rice fields left as hardpan soil in winter and then planted with green manure; the unit weight dropped by 0.057 grams/cubic centimeter and the water content dropped 4.9 percent.

2) Effects upon the chemical properties of the soil.

The Sichuan Province Agricultural Sciences Academy measured the contents of organic matter of different soils of triple cropping double season rice. Comparison of the organic content of the soil of late rice of 1979 with that of 1974 showed the organic content in the soil of the rape-rice-rice fields increased by 0.42 percent, that in the soil of green manure-rice-rice fields increased 0.27 percent, and that in the soil of "rotation" rice-rice (green manure, rape, wheat in rotation in consecutive years) fields increased 0.32 percent.

According to surveys conducted by the Guangji County Agricultural Bureau at Huaqiao Brigade and Chendeyun Brigade, the organic content of the continuous cropping green manure-rice-rice fields was 1.2 to 1.5 percent, the content of immediately effective nitrogen was 21 to 27 ppm, that of immediately effective phosphorus was 1.5 to 3.0 ppm, and that of immediately effective potassium was 30 to 38 ppm; followed by rape-rice-rice fields with 1.8 to 2.2 percent, 25 to 30 ppm, 4.5 to 5 ppm, and 55 to 60 ppm respectively--the latter were all better than the former.

The Xiaogan Prefecture Agricultural Sciences Institute measured the organic content of rice fields (1978) and showed the soil of the rape-rice-rice fields contained 4.32 milligrams/100 grams soil of hydrolytic nitrogen; the intensity of nitrogen supply was 3.99 percent (the amount of hydrolytic nitrogen as a proportion of whole nitrogen), while the soil of green manure-rice-rice fields contained 3.24 milligrams/100 grams soil and the intensity of nitrogen supply was 3.02 percent.

3) Changing the soil's ecological environment.

Our institute measured the change in ammonifying bacteria in the soil of different winter crops. Each gram of soil of the fields of rape crop contained 17.6 171.6 x 10^7, that of vetch fields contained 14.73 x 10^7, and that of barley fields contained 2.11 x 10^7.

The Zhejiang Province Agricultural Sciences Academy survey showed that the insect population in exposed roots of rice plants in winter crop rape and wheat fields after upturning was reduced by over 99 percent from the population before upturning. The amount of wintering crops and stems per mu of perennial trikeraia and similar weeds after rotation cropping of rape was 3.6 jin, equivalent to only one-fifth of the 18 jin of grass in continuous cropping fields. Production practice shows that the continuous return of rape stalks and stems for several years can also eliminate weeds of waterchestnuts.

5. It increases yield and increases harvest.

According to our surveys, during the first 5 years of the 1970's, the entire Guangji County produced an annual average of 2.51 million jin of rapeseeds and 416 million jin of food grains. During the last 5 years, when rape-rice-rice was developed, the average annual yield of rapeseeds was 11.62 million jin and that of food grains was 516 million jin; the annual increase of rapeseeds was nearly 3.6 times, and an additional 100 million jin of food grains was produced.

The Xiaogan Prefecture Agricultural Sciences Institute surveyed several multiple cropping systems (see Table 3). The annual production value of the rape-rice-rice system was the highest, reaching 248.79 yuan. The production value per yuan of investment was slightly less than broad bean-rice-rice, but far higher than the others, reaching 8.79 yuan. The yield of early rice was higher than that of the green manure-rice-rice system by 70 jin, an increase of 10.9 percent in yield. The yield of late rice was higher by 61.8 jin, also an increase of 10.9 percent in yield.

Table 3. The Yield and Production Value of Various Triple Cropping Systems (Xiaogan Prefecture Agricultural Sciences Institute).

Multiple planting methods	Crops and yield (jin/mu)			Annual production value (yuan)	Annual investment (yuan)	Production value per yuan of investment (yuan)
	Winter	Early season	Late season			
Broad bean-rice-rice	Broad bean 255	Early rice 703	Late rice 751	221.47	24.73	8.93
Green manure-rice-rice	Safflower 6000	Early rice 809.2	Late rice 722.5	187.64	25.04	7.57
Rape-rice beans	Rape 163	Early rice 729	Autumn soybeans 149.3	179.10	26.50	7.37
Rape-rice-rice	Rape 179.5	Early rice 776	Late rice 756.8	248.79	31.87	8.79
Green manure-rice-rice continuous cropping	Safflower 4000	Early rice 706	Late rice 695	171.62	24.92	6.95

Note: Data in the table represent 2-year averages of 1978-1979.

II. Superior Characteristics of Rape and Their Utilization

1. Characteristics of Productive Superiority of Rape

1) It has broad adaptability. Rape is a crop that is strongly adaptable and broadly distributed. According to statistics of the Food and Agriculture Organization of the United Nations, in 1979, there were 38 rape-producing countries in the world, the planting area was 189,705,000 mu, the average per mu yield was 114.1 jin, and the total yield was 216,453,400 dan.

Our nation's rape is widely distributed. It is planted in all 29 provinces (cities, regions). It is planted most in the Changjiang River valley, constituting over 80 percent of the total area of rape fields throughout the nation. In recent years, spring rape has been planted in the north and the development of winter rape has been rapid. Therefore, within the nation, from south to north, from plains to plateaus, rape can be planted everywhere.

2) Winter rape grows during winter and spring and does not conflict much with food grains, cotton and such major crops for land. Our nation's winter planted crops are mainly wheats (including beans), rape and green manure. At present, because the areas of green manure and wheats are overly large, affecting rotation cropping and changing of the crop openings, the enlargement of the area of rape is necessary. From the point of view of the production of oil-bearing crops, because the conflict in competing for land by the summer rape crop, food grain crops and cotton crops for a long time, the production of summer rape has not returned to past levels. From the point of view of farming activities, winter and spring are not as busy as summer and autumn, so this is also favorable to the development of rape production. Of course, this does not mean that the more we develop rape the better; to benefit rotation cropping and changing the crops, generally, rape should constitute 20 to 30 percent of the area of paddy fields.

3) The gains of rape production are many. Developing rape production can bring "five abundances": more oil, more fertilizers, more food grains, more money and more contributions to the state. Other crops hardly compare with it. If we consider only the economic revenue, other diversified enterprises may be higher than rape, but they do not provide the comprehensive gains of more oil, more fertilizers and more food grains. The development of rape is determined by the comprehensiveness of its productive gain.

2. Utilization of the Productive Superiority of Rape

1) Utilization model. Canada is the world's model of utilizing the productive superiority of rape. In 1943, there were only 2,000 mu of rape. In 1949, rape developed to 120,000 mu and the total yield was 160,000 dan, a per mu yield of 133 jin. By 1979, the area had reached 51.6 million mu and the total yield reached 71.22 million dan, a per mu yield of 138 jin. Over the past 30 years, the area of rape has expanded 429 times and the total yield has increased 444.1 times, ranking first in the world.

The 29-year averages of rape production from 1949 to 1977 in Guangji County was 37,000 mu, a per mu yield of 62.1 jin, or a total yield of 2,298,000 jin. In recent years, the development of rape has been very rapid, from 59,000 mu with a per mu yield of 63 jin totaling 3.71 million jin in 1977 to 120,000 mu with a per mu yield of 230 jin totaling 27.6 million jin in 1981. Over the 4 years, the area has expanded 1.03 times, the per mu yield has increased 2.65 times, and the total yield has increased 6.44 times.

2) Utilization of conditions. Developing the production of rape requires certain conditions. These conditions are: First, arranging the opening crop well: in triple cropping areas, the yield can only be increased by cultivating rape seedlings and transplanting. Therefore the problem of seedbeds must be solved well. Early opening crops of sesame, peanuts, early soybeans or double season late rice seedbeds and early maturing intermediate rice fields should be arranged as seedbeds. Double season late rice fields planned for the transplanting of rape should have opening crops of early and intermediate varieties of hybrid paddy rice so that rape can be transplanted early, in time to take advantage of the growth season. In places unsuitable for planting double season rice, the rice and rape double cropping system can be utilized. This type of rape can be directly sown. As long as we take into account the seasons and manage well, we can obtain double harvests of rice and rape. Second, accumulation of fertilizers. According to analysis, rapeseed of a per mu yield of 200 jin generally needs the same amount of fertilizer as that needed to produce 1,000 jin of rice grains. When fertilizers are deficient, special chemical fertilizers should be appropriated and the high temperature seasons of August and September should be utilized to gather and make fresh grass compost. In winter, farmhouse manure should be widely gathered to satisfy the rape requirements. Rape is sensitive to phosphorus fertilizers, and sufficient phosphorus fertilizers must be applied. In regions lacking boron, boron fertilizers must also be sprayed to prevent flowering without fruiting.

3) Improve techniques of cultivation. The unit yield of rape in the middle reaches of the Changjiang has always been very low. For example, the average per mu yield in Hubei Province during the 29 years from 1949 to 1977 was only 59.2 jin. The technical reasons were mainly that the seedlings of winter rape were too small, the resistance to adversity was poor, the seedlings died easily and were lost whenever drought and cold occurred. Even if the seedlings did not freeze to death, they did not grow well during the beginning of the year and the plants were small during the latter part of the year, while during the third and final stage of growth of the rape plant, the stem was thin and weak and the yield did not increase. Research and practice show that winter growth of rape in the middle reaches of the Changjiang is an important assurance of high yields. Within certain limits, the better the foundation of growth during the early part of the year, the higher the yield during the latter part of the year. Therefore, in the arrangement of production, emphasis should be placed on planting rape in the early part of the year; technical measures to promote winter growth of rape should be grasped tightly--for example, the selection and use of superior varieties of cabbage type rape, cultivation of large healthy seedlings for transplanting and heavy application of fertilizers during the early part of the year. On the basis of winter growth, we must strengthen spring management to promote spring growth and healthy growth to obtain high yields.

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COTTON VARIETY '86-1' RESISTANT TO FUSARIUM WILT POPULARIZED

Beijing RENMIN RIBAO in Chinese 14 Oct 81 p 1

[Article: "Superior Cotton Variety Resistant to Fusarium Wilt Is Being Popularized Throughout the Nation; the Yield Is High, the Properties Are Stable, It Matures Early, and Its Adaptability Is Strong"]

[Text] A superior cotton variety, "86-1," that can resist fusarium wilt has been popularized throughout the nation over 2.2 million mu. It was successfully cultivated jointly by the farmer technicians of Xinxiang County in Henan Province and the scientific and technical personnel of the Plant Protection Institute of the Chinese Agricultural Sciences Academy.

Fusarium wilt is one of the most severe diseases of cotton. Not only do the cotton plants carry the disease, even the land planted with diseased cotton cannot be planted with cotton the next year. With the cultivation of the new cotton variety "86-1," the problem of fusarium wilt was solved.

In 1980, over 50 counties in 11 provinces throughout the nation planted 1.2 million mu of the new "86-1" cotton variety as a demonstration and for popularization, and the results were all good. Last year Xinxiang County planted 150,000 mu, and the per-mu yield averaged 196 jin. Cixi County in Zhejiang Province is a region heavily affected by fusarium wilt. The diseased region generally produced several dozen jin of cotton per mu, but several 10,000 mu planted with "86-1" performed well and the average per-mu yield was 144 jin. This year, the Ministry of Agriculture has established the "86-1" cotton variety as a key item of agricultural science and technology for popularization throughout the nation. It has already been popularized over 2.2 million mu throughout the nation. Concerned experts believe that the "86-1" cotton variety is resistant to fusarium wilt, produces a high yield, possesses strong adaptability, matures early, the plant type is tight, it has few profusely growing branches, the leaves are small allowing easy aeration and light penetration, the pericarp of the cotton boll is thin, the opening of the boll is smooth, it is tolerant to irrigation and fertilization, it does not wilt early, and it is a good cotton variety that is worth popularizing in a big way.

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'JINGJI YANJIU' ON QUESTION OF ANIMAL HUSBANDRY

HK211041 Beijing JINGJI YANJIU [ECONOMIC RESEARCH] in Chinese No 11, 20 Nov 81
pp 78-81

[Article by JINGJI YANJIU reporter: "The Debate on Two Questions Related to the Present System of Ownership in Animal Husbandry--Summary of Views Aired at Third National Symposium on Economic Theories Concerning Animal Husbandry"--note slantlines denote boldface type]

[Text] The third national symposium on economic theories concerning animal husbandry was held at the end of August and early September this year in Urumqi, Xinjiang. The meeting discussed two questions that have arisen recently concerning the system of ownership in animal husbandry--the questions of households specializing in rearing in agricultural areas and private livestock in pastoral areas--in terms of the integration of theory and practice. The main views aired at the forum are summed up as follows:

On the Question of Households Specializing in Rearing in Agricultural Areas

The households specializing in rearing in agricultural areas (hereafter referred to as specialized households for short) are a new thing emerging in China's animal husbandry economy. Since the 3d plenary session of the 11th CCP Central Committee and up to now, they have developed at a swift pace. According to incomplete statistics collected from Liaoning, Jilin, Heilongjiang and Gansu Provinces and Tianjin, 83,700 households now specialize in rearing, of which the households raising chickens constitute 47 percent; those raising pigs, 16 percent; those breeding cattle, 13 percent, and there are other households raising sheep and rabbits and keeping bees. In addition, there still exist a large number of households raising relatively many animals and poultry as various "key households" in rearing which will advance to the form of specialized households. According to statistics, there are also at least 200,000 or 300,000 such households. They are playing a powerful role in developing China's animal husbandry production, providing the market with such foodstuffs as meat, milk, poultry and eggs and satisfying market demand. The emergence of specialized households attracted the attention of the theoretical circles. The following views were aired during this discussion:

/1. Forms and characteristics of the specialized households./ In practical production there are many and varied forms of specialized households. They can be summarized by and large as the three following forms: 1) The specialized contracting households formed by the state farms and the collective stockbreeding units. The characteristics of this form are that the farms (teams) own the livestock and the commune-member households raise them. The households contract out breeding responsibility from the farms (teams) and get remuneration through the unified distribution of the farms (teams). Participants in the meeting agreed that it was a component of the socialist sector of the economy under the system of ownership by the whole people and belonged to a form of animal husbandry production responsibility system. 2) There emerged in some places the specialized households in which the families of the staff and workers or the retired staff and workers engaged in raising livestock and poultry. They have no direct relations with the economy under the system of public ownership and are noteworthy in that the means of production are privately owned, and they market their livestock products through their own channels and are fully responsible for their own profits and losses in their operations. Everyone was of the opinion that this was a relatively complete individual economy under socialism. 3) The specialized households closely related to the socialist collective economy. They possess only part of the means of production and are in general assigned fields for growing fodder by the collective. Some of them hand over accumulation to the production teams (some do not do so), enjoy equal treatment like the peasant households which engage in farmland production and have some degree of unified distribution, but they practice independent operation, assume responsibility for their own profits and losses and own the products of their own labor. There have been divergent views on the nature of this kind of specialized household. Most of the comrades thought that it belonged to the category of the system of private ownership and was a form of the individual economy.

/2. The role of the specialized households./ Four aspects were listed roughly in this respect: 1) High commodity rate. Every household specializing in raising chickens in the four big and medium-sized cities of Heilongjiang Province, namely, Harbin, Qiqihar, Hegang and Jiamusi handed over on average 846 jin of fresh eggs to the state in a year. The amount of fresh eggs handed over constituted 72.4 percent of the total sum of fresh eggs purchased. 2) They have opened up new opportunities for arranging the surplus labor force and employment. In Xigu District of Lanzhou Municipality alone, the surplus labor force and 1,100 youths who were awaiting employment were provided with jobs through developing specialized households. 3) They have helped a portion of people become well-off ahead of the others and brought along the others to common prosperity. There were three sentences spreading far and wide in some places: "With three rabbits in a family, one will lack no edible oil, salt and vinegar"; "with 10 rabbits, one will not have to worry about cotton and cloth" and "with 100 rabbits, one can turn from poverty to riches." Developing household rearing requires less investment, promises greater benefits and produces remarkable results in becoming prosperous. 4) They are conducive to promoting the realization of the specialization and socialization of animal husbandry production. Some comrades hold that the emergence of the commune-member households specializing in rearing marks that household sideline occupation has entered a new stage, made the first step in specialization and become the starting point of the modernization of livestock farming.

/3. The origin of specialized households./ Participants in the meeting maintained that the emergence of the specialized households was objectively inevitable but they were not all unanimous in terms of understanding. There were approximately four different ideas in this respect. The first idea claims that it is the product of correcting leftist mistakes in animal husbandry. For a long period of time in the past, there have been the questions of pursuing the form of "big, public and foreign" in which the big squeezed out the small, the public squeezed out the private and the foreign squeezed out the local and of eating out of a "big pot." Since the 3d plenary session of the 11th CCP Central Committee, leftist mistakes have been corrected and the management improved, and the peasants have demanded putting an end to poverty and bringing about prosperity. Hence the form of specialized households has emerged as the times require. Some comrades hold that its emergence is in essence a readjustment of the relations of production in animal husbandry. The second idea maintains that the specialized households stem from the low level of the productive forces of China's animal husbandry. Even if there had not been any leftist mistakes in the past, the specialized households would still have emerged. Thus it is not justified to say that they are the product of readjustment. The third idea holds that the present productive forces of our animal husbandry are on the low side and animal husbandry production is still operated by manpower and animal power and people depend on nature in raising livestock. Under these circumstances, the scope of production should not be overstretched. This is the economic foundation for the present existence of the form of small-scale operations in the country's animal husbandry and the present swift and violent emergence of the specialized households is a manifestation of the correction of leftist mistakes, thus resulting in the widespread emergence of the form of specialized households which would normally have existed. The fourth idea considers that the emergence of the specialized households is an inevitable result in certain areas and is not universally inevitable. The multilevel standards of the productive forces of China's agriculture and animal husbandry demand the coexistence of diversified economic sectors. The economic development in different areas is unbalanced. The specialized households will emerge in the regions in a common state but not in the regions where the level of the productive forces is high. Some comrades deem that whether or not the specialized households emerge depends on the conditions and the demands and possibilities of the specific areas.

/4. The nature of the specialized households./ There are various doubts about the present emergence of the specialized households. For instance, is it working alone or not? Will it lead to polarization or not and will it disintegrate the collective economy or not? In terms of the nature of specialized households, there are mainly the following three arguments: One argument holds that it is an economy of a socialist nature. There are two kinds of specialized household: One is the form which is related to the socialist collective economy and hands over accumulation to the collective. This is the form of responsibility system in the socialist collective economy. The other is the form which is not related to the collective economy and does not hand over accumulation to the collective. It is a necessary supplement to the socialist system of public ownership and also socialist in nature. The socialist economy assumes the system of public ownership as the primary part, however the system of public ownership does not replace everything. Some comrades do not agree with this view, instead they hold that it obscures the demarcation line between the system of public ownership and that of private ownership, and that the socialist economy does not equal the economy under socialism.

The other argument holds that the specialized households under the present conditions which assume independent business accounting constitute a specific form of the production responsibility system in the collective economy. The system of ownership of the means of production determines the nature of the relations of production. In carrying out animal husbandry production, fodder is an important matter. However, the fields for growing fodder of the specialized households are publicly owned and the machines for processing fodder and motor vehicles for carrying materials and fertilizers are collectively owned. In another argument, comrades in relatively great numbers claim that the specialized households essentially belong to the individual economy, on which there are another four different views:

1) It is neither capitalist nor socialist in nature, but belongs to the individual economy. There exist no capital and exploitation in the specialized households. Even though a small number of workers and apprentices are hired in their development, the specialized households are still not capitalist in nature. Marx pointed out that "not any amount of money or value can be turned into capital," only when a certain quantity of workers were hired, could it be turned "from a simple quantitative change...to a qualitative difference." ("Das Kapital," Vol 1, pp 341-342) With regard to socialism, Lenin pointed out two fundamental characteristics of the system of public ownership of the means of production and distribution according to work. (See "Collected Works of Lenin," Vol 3, p 62) Judging the specialized households in the light of these viewpoints, they are essentially not socialist. They are characterized by the individual commune-member households possessing the means of production and the individuals owning the products. Therefore they are of the nature of the individual economy. Some comrades hold that they are a supplement to the socialist economy and as a supplement to the socialist economy, they are not the socialist economy itself.

2) The form of specialized households is that of the individual economy with socialist elements. Part of the means of production of the specialized households as land for growing fodder is owned by the collective. Though they comprise the individual economy in terms of production, they are subject to state planning. There are elements of collective unified distribution in the specialized households which hand over accumulation to the collective and undertake the expenditures of some social welfare. In the process of circulation including the supply of fodder, they are subject to state control as well. In terms of the various links of social reproduction, they are related to the socialist economy to varying degrees. So they have socialist elements. It is very important to understand this point. The specialized households will exist and develop for a long time in the socialist economy. In the future it is imperative for them to gradually expand their socialist elements and develop along the direction of the socialist system of public ownership.

3) The form of specialized households is an individual economy of a new type, which is signified by the fact that first, it has the socialist elements. From internal relations, that which plays a leading role in the specialized households is still the individual economy. This decides that they are of the nature of the individual economy. However, from external relations, such as the process of circulation, the definition of prices and the supply of fodder, that which plays a leading role in the specialized households is the socialist economy. Second, it is closely related to the socialist system of public ownership. The specialized

households are different from the individual hoseholds before the socialist transformation. The latter was related to the nonsocialist economy and the former is related to the socialist economy. Now the state-owned sector of the economy and the collective economy hold the leading position in our national economy. The specialized households have become a new type of individual economy.

4) It is an individual economy subordinate to the socialist economy. The specialized households are established on the basis of private ownership and of individual labor. Hence it is an individual economy. Household rearing is subordinate to the socialist sector of the economy under the system of public ownership. Such being the case, the specialized households cannot be turned into a sector of the socialist economy. Its nature is determined by internal causes and not by external causes. The relationship between the principal and the subordinate among the various economic sectors is only a quantitative change and cannot be a qualitative change. Being scattered, backward, weak and unstable, household rearing failed to become a specific mode of production for a long time in history and was always in a subordinate position. Under socialism it is similarly only a supplement to the economy under the system of public ownership as well.

/5. The development and prospects of the specialized households./ Participants in the meeting agreed that the development of the specialized households was not a temporary measure. They have great vitality and will exist and develop for a considerably long time. They cannot develop to capitalist mass production either. Their development and prospects are, as some comrades hold, inevitably forming economic integrated bodies. Some people maintain that there are two prospects for the development of the specialized households: One is forming economic integrated bodies and the other is bringing the specialized households into line with the production responsibility system of specialized contracting of the people's communes. Both will reach the same goal of developing collective production by different ways. Some comrades argue that the development of specialized households has pointed out a specific path for developing livestock farming in China's agricultural areas. The raising of chickens by the commune-member households in the four cities and their outskirts in Heilongjiang Province has been heading for specialization and socialization, as the path of "specialized household-chicken-raising village-service center-integrated bodies." The speed of advance along the path toward specialization and socialization with household rearing as the starting point may not be high, but this path can withstand all tests and hold its ground, and so it is feasible under the present conditions of our country.

On the Question of Private Livestock in Pastoral Areas

The question of private livestock has become a very sensitive question concerning the current system of ownership in pastoral areas. Bound by leftist ideology for a long time in the past, an excessively rigid control was exercised in this respect. After the 3d plenary session of the 11th CCP Central Committee, the policies were relaxed and this was warmly welcomed by the herdsmen. The present ratio of private livestock of the total number of livestock of Nei Monggol is 45 percent and that of Ningxia is 54 percent. During the discussion, all participants aired their views on the following questions:

1. Should Restrictions Be Imposed on the Quantity of Private Livestock

There are two differing views on this question. The first argument is that restrictions should be imposed. There are three kinds of reason for this argument: First, without restrictions imposed on the number of private livestock, the smooth development of animal husbandry will be affected. For instance, noninterference in the development of private livestock will upset the breed of fine wool sheep and be detrimental to the improvement of the breeds of livestock and will result in the overburdening and degeneration of the grasslands and disrupt the ecological balance. Second, without restrictions imposed on the number of private livestock, the collective economy will be interfered with. Judging from the problems which have been found out, raising together publicly-owned livestock with livestock privately owned by commune members will easily lead to the practice of exchanging the small for the big and the weak for the strong. At the same time, without restrictions imposed on the private breeding of livestock, the commune members are more often than not unwilling to accept the tasks of raising publicly-owned livestock. All these practices will harm the economy under the system of ownership by the whole people. The present number of private livestock in some areas has developed to 50 percent and if it develops a little further, the leading position of the collective economy will be disrupted. The third argument holds that by its nature, the term "private livestock" determines that it should be further restricted. Private livestock is a supplement to the collective economy. There is a quantitative limit to private livestock. If the limit is exceeded, it can no longer be "private livestock" and therefore must be called "privately owned livestock."

Another argument is that no restrictions should be imposed. There are three kinds of reason in this respect listed as follows: First, at present animal products are far from satisfying the needs. They can neither meet the social needs nor the needs of the herdsmen and commune members themselves. For this reason, it is imperative to vigorously bring into play the positive role of the two forms of public and private rearing of livestock and arouse the enthusiasm of the state, the collective and the individual for developing commodity production in the socialist society. Restricting the number of private livestock means restricting the productive forces. Second, the way to run the country well is to give top priority to making the people prosper. The present production in pastoral areas is underdeveloped and some peasants and herdsmen are still leading a difficult life. Developing private livestock is an important measure for helping the herdsmen to get prosperous. It has been warmly welcomed recently by the masses. Hence it is unsuitable to put any restrictions on it. Third, it is necessary to fully utilize the natural resources of animal husbandry. For instance, Ningxia is located in the areas irrigated by channelling the Huang He River and "the boundlessly long Huang He River makes Ningxia rich." Although the areas are agricultural areas, it is no problem at all for a peasant household to raise five sheep and it is even possible for it to raise 10 sheep. Ningxia is a key area for raising beach sheep whose breed is fine and which are needed by society. So the development of private livestock to meet the needs of society should be encouraged and the quantity should not be limited.

On the above-mentioned questions they hold that:

1) The increased number of private livestock cannot change the nature of the collective economy. The nature of the relations of production is decided mainly by the condition of the ownership of the means of production. At present the means of production of animal husbandry mainly include two aspects: Grassland and livestock, of which the grassland is owned by the state and livestock is owned by the state, the collective and the individual. Of this the private livestock constitutes a small part whose development is restricted by the state-owned sector of the economy and the collective economy which hold the leading position. Therefore, the development of private livestock cannot change the socialist nature of the collective economy.

2) The development of private livestock is subject t the restriction of natural and economic laws. First of all, animals and poultry are living things and their growth and breeding are subject to their own special laws and to environmental conditions. China's present grassland which can be utilized is limited, its levels of production technology and equipment is low and we depend on heaven in raising livestock to a large extent. In many places with the seasonal changes of weather, people have to herd from place to place time and again. In some areas in Xinjiang people have to cover 400 kilometers to change places for herding. Therefore the number of livestock bred by a family or a household cannot be great. Second, with the development of the productive forces, the small-scale animal husbandry production will inevitably develop to modernized mass animal husbandry production. This is the objective economic law independent of man's will. The future development of private livestock of the commune members will inevitably head toward integration. This trend of development has revealed itself to some extent in quite a few regions. Therefore its development cannot overpower the collective economy.

3) Many of the present problems that have cropped up in developing private livestock are due to mistakes in our work, which are not hard to solve through strengthening management. For instance, in solving the question of exchanging the small for the big and the weak for the strong in breeding together private livestock and publicly-owned livestock, Altay Prefecture of Xinjiang adopted a method of organizing the animals into groups separately and grazing them collectively and in which the herdsmen handed over certain amounts of herding expenses and satisfactory results have been achieved. To tackle the question of the development of private livestock disrupting the grassland, while developing the private livestock of the commune members, it is advisable to assign the commune members responsibility for the grassland under a contract and to ask them to fulfill the requirement that "where there is livestock there will be grassland" and fix the right to use the plots of grassland among the households concerned. In addition, on the question of granting some preferential treatment to private livestock, the participants agreed that private livestock and collectively-owned farm animals should be treated equally without discrimination in terms of collecting stock-raising taxes, the distribution of purchase quotas of animal products, undertaking the responsibility for grassland construction and the charge for the fees of improving the breed and preventing animal diseases, and all these should be rationally borne by the parties concerned according to the number of livestock and poultry they raise. It is necessary to give proper care to the livestock for personal needs in the early stage of encouraging their development, but it is not desirable to let it become a difference which will exist for a long time, resulting in the development of publicly-owned livestock finding themselves in a disadvantageous position economically.

2. On the Policy for Developing Livestock Farming

Participants at the meeting held that inquiring into the question of whether or not the quantity of private livestock should be restricted was in essence probing into the policies for developing animal husbandry, that is to say, the question of which should go first: public rearing or private rearing. One argument holds that we should depend mainly on collective rearing in developing China's animal husbandry on a large scale. The correct way must be that of developing the collective economy, the number of private livestock must be correspondingly increased but there must be a proper proportion between the collective economy and private livestock. To develop animal husbandry, it is imperative to uphold the principle of walking on two legs. In the past, undue emphasis was put on collective stockbreeding and private livestock was abolished, thus committing the mistake of being one-sided. Today we must not unduly stress the development of livestock for personal needs and commit more mistakes of one-sidedness. Viewing the country as a whole, in developing animal husbandry, we must adhere to the principle of walking on two legs, however, in agricultural areas, it is permissible to put private rearing first, because animal husbandry there is a sideline occupation, but in pastoral areas public rearing should be put before anything else, because it is the primary occupation there.

Another argument claims that the development of animal husbandry in pastoral areas should be speeded up. The levels of production and livelihood of China's herdsmen are still very low and there is still the question of having enough to eat and wear which demands solution first in many regions. Under these circumstances, we must not restrict the number of private livestock and the part in excess of the number of livestock which are publicly raised should be allowed. Only when the enthusiasm of the herdsmen for production is mobilized, can the superiority of the socialist collective economy be brought into play. The development and prospects of individual rearing by the herdsmen must be to advance toward integration, thus forming collective rearing, and guaranteeing the leading position of the socialist system of public ownership.

Some comrades maintain that to enthusiastically implement the policy of walking on two legs, while encouraging the development of private livestock, we must conscientiously develop collective rearing and must not control the ratio of private livestock in a simple and passive way. The specific measures must be integrating the implementation of animal husbandry production responsibility systems with the development of private livestock, and arousing enthusiasm for public rearing and private rearing on the basis of the integration of the interests of the collective with those of the individual.

3. The Relations Between Developing Private Livestock and Reform of the People's Commune System

The meeting pointed out that the development of private livestock must lead the herdsmen to forming economic integration. Economic integrated bodies of this kind are of the nature of the collective economy, but not a move back to the original place of the present collective economy of the people's commune. China's present management system of the people's commune bears relatively many elements of administrative management. Proceeding from the need to expand production, the herdsmen voluntarily formed economic integrated bodies which are entirely collective economic organizations, which have greater intrinsic economic vitality in developing animal husbandry production. In this sense, the development of private livestock will result in the reform of the management system of the people's commune from its current readjustment.

Related to this, some comrades consider that the present development of private livestock has surpassed the limit of being "a supplement" to the collective economy and involves the question of the pattern of economic development of China's animal husbandry. Only when we have a wide field of vision, can the question of private livestock be discussed satisfactorily. There exist various patterns in the development of China's animal husbandry. We must be bold in exploring and not rigidly adhere to one pattern only and not singly take the same old track. Therefore, they regard that we must not inquire into the question in a summary fashion of whether or not the ratio of private livestock can surpass the limit of 50 percent. It is regarded as positive that compared with the individual economy, the socialist collective economy has greater superiority. The problem now is, what specific economic patterns and management system should be adopted. The standards to make a choice must be to accord with the demands of the objective economic laws, to have greater intrinsic economic vitality, to promote the rapid growth of the productive forces and the collective economy on the basis of giving scope to the initiative of the vast numbers of herdsmen for production, to provide society with rich animal and poultry products and raise the living standard of the peasants and herdsmen at a faster speed.

CSO: 4007/135

HOUSEHOLDS IN FOUR PROVINCES, TIANJIN EXPAND ANIMAL HUSBANDRY

Beijing RENMIN RIBAO in Chinese 30 Oct 81 p 1

[Article: "Specialized Families Raising Fowl and Livestock in Cities and Villages; This Involves Little Investment, Development Is Fast, and It Has Important Significance in Enriching the Supplies of Meat, Eggs and Milk in the Market"]

[Text] Families specialized in raising fowl and livestock in our nation's cities and villages are developing prosperously. According to incomplete statistics from Liaoning, Heilongjiang, Jilin and Gansu provinces and Tianjin Municipality, the number of specialized families involved in the feeding and raising industries is now more than 80,000. There are also more than 200,000 key families engaged in raising and feeding. The provinces and cities in the south are actively expanding the number of families specializing in the raising and feeding industries according to the characteristics of having rich resources of water and grass in the localities.

Because the concerned departments at each locality have given active encouragement with regard to policy to the families specializing in raising fowl and livestock and have given large amount of support in the form of capital, the number of various specialized families has increased and the scope of business has become broader and broader, from families who specialize in raising chickens and hogs to families specializing in raising rabbits, ducks and geese, keeping bees, raising cattle, and raising sheep; from families specializing in raising such animals to families specializing in breeding livestock, incubating chickens, slaughtering and feed processing. The scale of business of specialized families has also gradually expanded. Now some families specializing in raising fowl have over 1,000 birds.

The practice at each locality has proved that the raising of fowl and livestock by specialized families has a great superiority. One advantage is that the scattered sheds and buildings, fields, feed, capital and auxiliary labor force can be fully utilized. The investment is small, there are quick results and one becomes rich quickly. The second is that the productive rate and the commodities rate are high. The third is that it has opened up a wide road for employment opportunities, and has provided employment for large groups of surplus labor and some of the unemployed youths in the cities. The fourth is that it hastened the popularization of science and technology. After the specialized families have developed, the feeders urgently need to learn the technical knowledge of scientific raising, consciously seek out superior breeds, study the combination of feeds, and study the prevention and control of diseases, thus rapidly popularizing advanced technology.

As the scope of families specializing in raising livestock and the scale of business continue to expand, various forms of joint economies are emerging. In our nation, over 90 percent of the hogs and fowl are raised by commune families. Of the meat and eggs on the market, over 90 percent are supplied by commune member families. Therefore, the active development of families specializing in raising livestock has an important significance in enriching the supply of meat, eggs and milk in the market.

9296
CSO: 4007/101

USE OF SYSTEM OF FISCAL RESPONSIBILITY TO RAISE OUTPUT DESCRIBED

Guangzhou NANFANG RIBAO in Chinese 2 Nov 81 p 1

[Article: "More Than 80 Percent of Farms in Province's State Farm and Land Reclamation System Realize Profits; Assigned Fiscal Responsibility Has Brought Out a Spirit of Enterprise in Cadres, a Sense of Responsibility in Workers, and a New Look on Farms"]

[Text] At the present time, 148 of the province's 175 farms and enterprises in the provincial state farm and land reclamation system are making a profit. This amounts to 84.6 percent of the total number. This is a heartening result of the state farm and land reclamation system's elimination of "leftist" influence, and promotion of systems of economic responsibility with assigned fiscal duties. During mid-October, the state farm and land reclamation system convened a three echelon cadre conference to summarize these experiences. Delegates to the conference spoke words of praise such as institution of assigned fiscal responsibility has brought out a spirit of enterprise in cadres, a sense of responsibility in workers, and a new look on farms.

Most of the more than 100 farms in the province's state farm and land reclamation system produce rubber, tropical economic crops secondarily. The scale of farms is large, staff and workers numerous, and household industries large. For many years a fiscal system of uniform receipts and uniform expenditures has been used, all farm profits being turned over to superior authorities and all losses being subsidized by the state. Cadres, staff, and workers had an "iron rice bowl" and they ate from a "large common pot." Even though production conditions on some farms were pretty good, over the long term losses could not be avoided.

Following the Third Plenary Session of the 11th Party Central Committee, Guangdong Province's state farm and land reclamation system steadily eliminated the "leftist" influence and reformed the system of management of enterprises. As a result of trial use, they decided to set up assigned fiscal responsibility at each level in state farm and land reclamation units, promoting "assigned responsibility for receipts and expenditures, apportionment of receipts in excess of norms, and retention of funds conserved" in a system of responsibility of assigned fiscal duties. Each farm was assigned a fixed amount of investment, a fixed amount of grain, a fixed workforce, fixed major production targets, and fixed amounts of profits to be paid higher authority. State farm enterprises also established corresponding systems of responsibility and systems of distribution for production teams. Thus, the entitlements, responsibilities, and benefits of all enterprises were made uniform, the way in which farms were operated being linked directly to the individual welfare of staff and workers in a reflection of the principle of to each according to work. This brought about a great increase in the enthusiasm of workers and staff, and in their labor productivity rate. Last year comparable production costs of 11 products including rubber, tea, sisal hemp, oil palm, and paddy rice fell 18.4 percent from the previous year's costs, and for 23 major items, outputs increased in varying degrees over the previous year. In the case of 10 of these items, production plans for the entire year were fulfilled ahead of schedule. This year, despite the depradations of a 5-force and a 16-force typhoon, production of all items has continued to expand. As of the end of September, the state farm and land reclamation system had produced more than 61,900 tons of dry rubber in completion of 84.8 percent of the entire year's plan, an 11.8 percent increase over the same period last year, which was a bumper harvest year.

Institution of a system of assigned fiscal responsibility also has promoted economic diversification on farms. During the past 2 years, the state farm and land reclamation system has newly planted more than 60,000 mu of sisal hemp, tea, black pepper, coffee, and fruits. Each farm has also used local raw materials to develop processing industries, thereby increasing the value of some low priced agricultural byproducts through processing to increase economic income. This has also played an important role in increased output, increased earnings, and the realization of profits.

9432
CSO: 4007/111

END TO NEGLECT OF WATER-CONSERVANCY PROJECTS URGED

Guangzhou GUANGZHOU RIBAO in Chinese 30 Oct 81 p 2

[Article: "Managing Presently Available Water-Conservancy Installations Well Is an Urgent Task"]

[Excerpts] After liberation, our city continuously built a large number of water-conservancy engineering installations. Among them, there were over 1,600 water-storage installation projects, irrigating 770,000 mu; 1,921 water-drawing projects irrigating 730,000 mu; and over 4,000 electrically powered drainage and irrigation stations with an installed capacity of 150,000 kilowatts. Mechanical drainage and irrigation units numbered over 110, with a total of over 1,900 horsepower. There are over 300 water-wheel pumps that serve to drain and irrigate 1.38 million mu of farmland. River and ocean embankments and levees extend over 1,800 kilometers, guarding 1.49 million mu of cultivated land and a population of 1.19 million. The area of assured harvests in drought and waterlogging throughout the city constitutes 76.1 percent of the total area of cultivated land. These engineering projects are important facilities that guard our city against natural disasters, and they are material guarantees for the stability and development of agricultural production.

For a long period, because of "emphasis on new construction and neglect of management, emphasis on backbone projects and neglect of ancillary construction, and emphasis on engineering projects and neglect of practical results," a large number of water-conservancy installations at present have still not fully developed the gain they should have. If management of some engineering projects is not strengthened, damage by water may occur. According to statistics, of the 15 medium-size reservoirs under the city's management, 2 do not meet the standards issued by the ministry. Of the 75 small reservoirs under the city's management, 17 have thin earth dams and either do not have any or have insufficient protective slopes and rocks. The spillways of 13 [small reservoirs] have problems: 8 of them have leaking culvert pipes, and 5 have ineffective filtration barriers and leaking dam slopes. There are 145 places throughout the city with dangerous embankments totaling 26 kilometers, and 30 dangerous floodgates. The Longping Canal in Longmen County was originally designed to irrigate an area of 63,000 mu. Because of poor management for a long period, there is serious silting, the seepage in the cannal is large, and it actually irrigates only 35,000 mu; thus the gain has dimished greatly. The Shiliuhua antisiphon is the bottleneck project of the main trunk canal on the right bank of Liuxihe. During the 1950's it was built with bamboo reinforcement members instead of steel members. Now, the side wall has split open and is leaking, the coverboards have peeled off, and the members are exposed, but it is still in use "even when sick." If it is not rebuilt in time, it will affect the irrigation water for 220,000 mu of farmland. These situations show that concretely managing our city's presently available water-conservancy installations well is an urgent task.

To strengthen the management of water-conservancy installations, we must first strictly carry out the laws concerning the protection of water-conservancy facilities. In recent years, as the policy in farm villages has been relaxed, some localities have violated the benefits of the state and the collective, and water-conservancy installations have been destroyed. When the Shaxi Reservoir in Conghua County was built, the authorities compensated for the fruit trees [on the land] occupied by the reservoir. Several months ago, some individual commune members went to the reservoir to reclaim the fruit trees assigned to them during land reform and carved their names on the trees to make them their private trees. The saplings of fruit trees at the Gaobu Reservoir in Zhengcheng County were stolen, the reservoir was drained to catch the fish, and some people even openly planted crops on top of the weirs of spillways, with no regard for the safety of the reservoir. Commune members of the Qixingdun forest farm in Longmen County unloaded timber on the dam slopes of the Qixingdun Reservoir and crushed two sets of pressure meter tubes, affecting the safe observation of the dam. Three kilometers of ocean embankments of the Wanqingsha joint encirclement in Panyu County have been assigned to commune members as private plots, directly affecting the management of and rehabilitation work on the embankment. These situations have occurred mainly because some units and departments have not conscientiously implemented the management system for water-conservancy installations, they do not abide by the law, and their execution of the law is not strict. Therefore, it is necessary to reemphasize to the broad numbers of cadres and masses the "Notice Concerning the Protection of Water-Conservancy Engineering Projects" issued by the provincial revolutionary committee in 1978 and the "Notice Concerning the Protection of the Safety of Reservoirs and Aquatic Resources" issued by the State Council in 1979. Water-conservancy departments at each level must take the initiative to report the situation to the local government and coordinate with the administrative and judicial departments in order to deal strictly with such illegal activities.

9296
CSO: 4007/97

GUANGDONG

SUGARCANE AREA EXPANDED; PRODUCTION UP IN SOUTH

Record Yield Expected

Guangzhou NANFANG RIBAO in Chinese 28 Oct 81 p 1

[Article: "The Fragrance of Sugarcane Covers Southern Guangdong; Sugar Refineries Prepare for Pressing; This Year Our Province's Sugarcane Production Is Expected To Increase; the Planting Area Has Expanded by 690,000 Mu Over Last Year; Total Yield of Sugarcane Will Increase Over 30 Percent"]

[Text] The annual season of sugarcane pressing is about to begin. This year, our province's sugarcane production is in a good situation, the planting area is large, the unit yield is high, and there has been a large-scale increase in the total yield. The area of sugarcane planted throughout the province reached 3.25 of sugarcane planted throughout the province reached 3.25 million mu, an increase of 690,000 mu over last year. The average per mu yield of industrial sugarcane will increase nearly 400 jin over last year. The total amount of sugarcane which can be supplied to sugar refineries for pressing will increase nearly 2.8 million tons over the previous pressing season, and the total sugarcane yield will increase by over 30 percent. The total yield of sugarcane throughout the province is expected to break the highest record in history.

Starting from the previous pressing season, the provincial people's government has readjusted the policy of sugarcane production, solved the conflict between sugarcane and food-grain production, and further mobilized the enthusiasm of each locality and the broad number of farmers to plant sugarcane, with the result that this year the area planted in sugarcane has increased, field management work has been fine and timely, and more fertilizers have been suitable for the growth of sugarcane since the beginning of summer this year, and not one sugarcane-producing region has had a severe natural disaster. Thus the growth of sugarcane has been especially prosperous, and there has been a bumper harvest of sugarcane in every locality throughout the province.

In order to adapt to the great increase in sugarcane production, this year the whole province built 7 sugar refineries and expanded 14 old refineries. It is estimated that the 20 [figure as published] sugar refineries will have an added daily pressing capacity of 9,450 tons--a gain which can be developed during the new pressing season. Each sugar refinery has established measures to start pressing early and to increase the daily amount pressed and has conscientiously carried out the repair of facilities, thus starting out with the goals of pressing early, pressing more, [and stressing] safety, superior quality, and low operating losses.

Before the start of pressing, each sugar refinery sent people deep into the sugarcane regions to conduct surveys and studies and did a good job of planning and balancing cutting, transportation, and pressing of sugarcane during the pressing season. Concerned departments of transportation, commerce, and materials supply also actively coordinated their efforts. At present, the vehicles and vessels needed to transport the sugarcane have already been arranged. Such materials as coal, fuel, bast fiber bags, and sulfur for production are continuously being shipped to the sugar refineries, and the sugar refineries throughout the province have basically made preparations for the work of pressing.

Preparations for Refining

Guangzhou NANFANG RIBAO in Chinese 28 Oct 81 p 1

[Article: "With A Big Bumper Harvest of Sugar Cane, What If Pressing Capabilities Are Insufficient? Xuwen County Used Six Measures to Solve the Worries of the Sugarcane Farmers"]

[Excerpt] Xuwen County is expected to have a big bumper harvest of sugarcane this year. The sugarcane farmers generally worry that the refineries may not be able to press so much sugarcane. The county party committee and the county people's government recently adopted six measures to solve the worries of the sugarcane farmers.

Most of the commune brigades in Xuwen County implemented the production responsibility system of contracting work to the families, and the enthusiasm of the farmers in planting sugarcane is very high. The whole county planted a total of over 180,000 mu of sugarcane, and the total yield is estimated to reach 600,000 tons, double last year's figure and 50 percent more than the highest level in history, reached in 1978. The daily amount that the five sugar refineries throughout the county can press is only 3,300 tons. There are six indigenous sugar-refining sheds. During the normal production period they can press only 450,000 tons, and 150,000 tons will remain to be pressed. Therefore, the farmers have been very worried.

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EXCELLENT SOYBEAN CROP IN SHAOGUAN PREFECTURE

Guangzhou NANFANG RIBAO in Chinese 27 Oct 81 p 1

[Article: "Shaoguan Prefecture Produces Over 10 Million Jin of Soybeans on Embankments in Fields: Embankments of Each Mu of Paddy Rice Produce an Average of Over 15 Jin of Soybeans"]

[Text] The farmers of Shaoguan Prefecture in Guangdong Province have exploited the potential of the land. This year, they planted soybeans on field embankments in over 760,000 mu of paddy ricefields. The total yield has reached 13 million jin, and embankments of each mu of paddy rice have produced an average of over 15 jin of soybeans.

Paddy ricefield embankments seem to be very narrow, but when they are fully utilized, their potential is very great. According to surveys, the embankments of 15 to 20 mu of ricefields add up to about 1 mu of land. Converting the amount of embankments already utilized this year, this is equivalent to expanding the cultivated area by 40,000 mu. Calculated according to the economic value of soybeans produced this year, the farmers have increased their income by over 8 million yuan. Also, there are large amounts of vines being returned to the fields, this increasing organic fertilizers.

Ricefield embankments are damp and fertile, and the yield of beans planted there is relatively high, but because they are scattered they are difficult for the collective to manage. At the end of 1979, Shaoguan Prefecture abolished the regulation that commune members who plant beans on embankments must submit and sell a portion of the products to the collective. All products belong to the commune members. This mobilized the enthusiasm of the commune members to plant beans, and the planting area has expanded every year.

Because of the development of beans planted on embankments, bean products that used to be in short supply on the market in the towns and villages of Shaoquan Prefecture, such as bean sprouts, bean curd, soybean milk, and dried soybean sticks, can not be bought.

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ANNUAL TIMBER PRODUCTION PLAN IN TROUBLE

Guangzhou NANFANG RIBAO in Chinese 27 Oct 81 p 2

[Article by reporter Lin Xi [2651 1585]: "Exert More Efforts To Complete This Year's Timber Production Task"]

[Text] This reporter has learned from the departments concerned that this year, our province's timber production task has not been completed well. Up to the third quarter, only 1.01 million cubic meters have been produced, constituting just over 58 percent of the annual task. To produce the remaining amount in the fourth quarter will require more effort by the cadres and commune members in the forest regions.

Not completing the timber production task well will directly affect the economic construction of the nation, and in particular it will be very unfavorable to our province's industrial production. Because of the shortage in the supply of timber, great difficulties have already been created in paper manufacturing, the manufacture of matches and of medium and small farm tools, and even in the building industry, which uses timber as the major raw material. At the same time, because the production task of pit props was poorly completed, the shortage in the supply to the central authorities and other provinces is great. This has affected the normal production of coal in other provinces that use pit props supplies by our province, thus hindering these coal mines from supplying coal to our province according to plan. It has also affected our province's industrial coal and power generation. This will be very unfavorable to industrial production in the fourt quarter.

According to an analysis by the departments concerned, the greatest causes of this year's timber production shortage in our province have objective and subjective aspects. One of the objective reasons is that after the "emergency notice concerning the determination to stop uncontrolled felling of forests" was issued by the State Council last December, the forest region stopped felling, and the remaining inventory of timber last year was very small, thus affecting the progress of timber production this year. A second reason was that the masses in the forest regions have been waiting for the state to readjust timber prices during the first half of this year, and they have delayed selling and submitting timber, causing a passive situation.

However, the subjective reason that the timber production task has not been completed well is worth noticing. According to complaints, the patriotic concepts of the cadres and commune members of many commune brigades and counties which have completed their tasks poorly is relatively superficial. This reporter saw in one report that as of August, one forestry county in our province had completed only 93 cubic meters of the task of producing pit props, constituting 0.93 percent of the plan for the whole year. During the same period, Yingde County's production task of over 8,900 cubic meters of pit props had already been completed early with a surplus. It can be seen from a comparison of these two counties that the completion of the timber production task varies according to whether patriotic concepts are established. The county that completed the task of producing pit props poorly had over 250 timber processing plants. Calculating at a figure of 200 cubic meters of timber a year needed by each timber processing plant, the amount of timber consumed by the whole county is not small. Because the production of timber not included in the plans is larger than the production of timber included in the plans in many places in our province, this surely has affected the completion of the state's timber production goal.

How can we lessen the shortage in timber production? The concerned departments of the province hope that the leading agencies and concerned units of each locality will strengthen the political and ideological education of the cadres and masses in the forest regions, concretely implement and carry out the emergency notice issued by the provincial people's government during the last 10 days of September insisting on completion of the task of timber production, consider the overall situation, and exert all efforts to complete the task of timber production within the time remaining this year.

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GUANGMING LIVESTOCK FARM SUPPLIES PRODUCTS FOR HONG KONG

Dairy Farm

Beijing RENMIN RIBAO in Chinese 5 Nov 81 p 2

[Article by staff reporter Hua Shan [5478 1472]: "Visiting the Guangming Livestock Farm"]

[Text] There is a rumor that the fresh dairy products of the Guangdong State-Run Guangming Livestock Farm have captured 60 percent of the Hong Kong fresh milk market since June. Feeling very happy, I rushed over to visit.

The livestock farm is 60 kilometers from Shenzhen. Xiao Xu, who received me, came here in 1958 when the farm was built during the campaign to go down to the villages and up into the mountains. Rubber had been planted here, lemongrass had been planted here, and later there was a change over to livestock production, but nothing had done well, mainly because the state did not have the capability for investment. It also engaged in a single-product economy, but it was difficult to maintain a living. But he did no leave. He held on to the frugal idea that "agriculture is the foundation," as he did not believe that such a large area could not realize any achievements. As expected, since the Third Plenum, through the introduction of foreign capital, [the livestock farm] has introduced superior varieties and facilities from the international market and has begun a modernized cattle farm, a duck farm, a hog farm, a dairy plant, a meat plant, and a feed processing plant. It established the livestock farm as the export base for joint agricultural, industrial, and commercial ventures. The superiority of resources was manifested. In 1978 this farm exported only 2 tons of fresh milk a day, whereas this year, exports have increased to 8 tons, 10 tons, and 12 tons a day! Each ton earns a pure profit of 1,200 HK dollars. The two highest priced brand names in Hong Kong, "Pearl River Bridge fresh milk" and "Weitacun fresh milk," are both produced by this farm.

An interesting thing is that "Pearl River Bridge fresh milk" was originally the product of a livestock farm in Guangzhou. Because of poor sterilization, its reputation was ruined and the export reputation dropped suddenly. The Guangming Livestock Farm believed this was unfair and contracted for the job. It used the newly built milk plant to begin production. This was the compensatory trade item signed with the Hong Kong Bean Products Company in March 1979.

According to the contract, the client invests 26 million HK dollars in 3 years and contracts for the marketing of 28,500 tons of dairy products for 5 years, with principal and interest to be repaid with 50 percent of the revenue. By 1984, the farm plans to have 5,000 head of dairy cows producing 10,000 tons of milk, and they all belong to the livestock farm.

I toured the cattle farm and saw the milk factory, and I have three outstanding impressions. One is that the livestock farm is huge. Just looking at a small part of it requires traveling several kilometers. Corn, pumpkins, and green grass which the dairy cows love to eat are everywhere. The second [impression] is that the imported equipment is all relatively advanced, like the "fishbone" fully automatic milking machine. Twenty-four dairy cows are lined up in two rows, listen for the whistle, and enter the production area. Each cow hurries to a feeding trough and automatically lines up in a fishbone formation. The workers then take the milk pipes, place the pipes against the nipples, and begin milking the cows. It only takes a dozen or so minutes to milk 400 cows at once. Also, the fresh milk machine washes, sterilizes and packages the milk bottles completely automatically. The empty milk bottles that are returned from Hong Kong go into the production line here. Purified water washes the milk residue, the straws, the caps, and the paper labels. Bottled and sealed fresh milk goes out the other end onto the conveyor belt. It is a happy sight to see. The third [impression] is that sanitation control is very strict. Vehicles driving into the farm must all drive through a sterilization pool. People entering the farm must go to the locker room to change into white uniforms and boots and be exposed to ultraviolet light to kill germs, and must step on sterilizing pads to enter the farm. The cement floor of the cattle barn has just been washed. The dairy cows seem to have grown accustomed to being bathed, and they let the female feeders use water pipes to carefully wash their bodies to prevent contamination of the milk. The raw milk enters the dairy products plant and remains in automatic temperature-reducing milk containers at 8°C to 10°C for 24 hours. After inspection for spoilage, the milk enters a high-temperature sterilization system. The sealed product has to remain in the freezer for 24 hours, and the chemical laboratory has to take random samples. Because the reputation of the brand name was once shattered, the border inspection both in Guangzhou and in Hong Kong are very careful. Unexpectedly, after several inspections, all four major indices reached international standards and topped all other fresh milk products on the market. The news media in Hong Kong and Macao were in an uproar, television stations came and filmed the production and broadcast the show, and a craze to try the "Pearl River Bridge brand" emerged in the market.

Because Hong Kong real estate is expensive, livestock farms are small and few, the daily production of dairy products amounts to only 60 to 70 tons, and all of them are so-called reprocessed milk--from reprocessing with water added to powdered milk. When the fat content is not sufficient, vegetable oil is added. True fresh milk amounts to only 20 tons. Therefore, it is popular not to add sugar to milk, to add nothing, because the fragrance of fresh milk is worth money.

There was a company that had 500 head of dairy cows. It wanted to monopolize the market, and it once approached "Guangming" to seek a partnership, but it did not utilize the superiority of the "Guangming" Livestock Farm. It stipulated that only 500 head of dairy cows should be kept, and the rest would have to be killed. This deal did not go through. As a result, this company could not compete, gave up selling fresh milk, and changed over to producing ice cream. Hong Kong's acting governor came to the farm to visit and said: "You have done a good deed for Hong Kong. Britain's Liberal Party MP Lord (Mackey) came to visit and also expressed praise: You will earn a lot of money!

Duck Farm

Beijing RENMIN RIBAO in Chinese 6 Nov 81 p 2

[Article by staff reporter Hua Shan [5478 1472]: "Guangming Duck"]

[Text] After seeing the dairy cows, we went to see the duck farm. Torrential rain came pouring down. Thunder roared through the skies, forcing us to get into the vehicle. But where would the ducks, which are like clouds covering the whole mountain, go and hide! Xiao Xu said it does not matter; these are Australian dryland ducks, and their adaptability is strong. After feeding for some 20 days in the duck sheds and growing to about 2 jin, with one inoculation, they can be released to roam freely to find food. All that has to be done is to spread pellet feed on the ground. They can grow up to 6 jin within 55 days after emerging from the eggshell. This slope has 120,000 ducks!

The duck farm of the Guangdong State-Operated Guangming Livestock Farm has required less investment, has entered production quickly, and its products are sold in Hong Kong and Macao. "Guangming duck" is a joint venture between our nation and the Winglei Company of Hong Kong. On 3 May 1979 a total of 6,400 breed ducklings were shipped from Australia to Guangzhou by air. They were shipped to the farm the day they arrived and were sent to the duck shed for cultivating the young. The breed ducks laid eggs in 180 days, and by that time the incubation room had been completed. The birthrate is 80 percent, and the survival rate of meat ducks is 93 percent. Starting last February, 1,000 ducks were exported each day. Since the beginning of this year, 2,000 ducks have been exported a day. Meat ducks are much larger than local ducks, the meat is tender and the bones are soft, and the body is beautiful, like a small goose. They are best for making Guangdong roast duck, and the restaurants and hotels in Hong Kong and Macao welcome them. Up to the end of March of this year, the annual sale was 432,800 ducks at 32.15 HK dollars each; total income surpassed 10 million HK dollars. The clients are satisfied with the production of the duck farm, but accounting revealed that the business is suffering a loss! And the more ducks exported, the greater the loss. Duck-raising experts became anxious: "Let us simply twist all their necks off and give up!"

Why is it suffering a loss? The manager of the livestock farm calculated three figures for me. One was that the price of feed has risen nearly one half. The livestock farm does not have a representative in Hong Kong, and the imported feed is all purchased by the clients. Each meat duck requires some 10 jin of feed [costing] about 7.5 HK dollars, and the feed constitutes 90 percent of the cost of production. The second is that the shipping loss is astonishing. Exports of "Guangming duck" are handled by the "Wufeng Heng," the province's foreign trade representative stationed in Hong Kong. The ducks are shipped from the duck farm to the Shenzhen-Wenjin ferry and then directly to Hong Kong, only 3 to 4 hours in shipping distance, but each year 9,100 ducks die or are lost on the way, and the ducks often lose 70,000 jin in weight in addition to their normal weight loss. The selling price of meat ducks is not established by contract beforehand but reported later. The third is that there are many intermediaries and the costs are high. The Shenzhen Foodstuff Export Company charged a 3-percent handling fee (later changed to 5 percent), the Wufeng Heng charges 2 percent, and the rental for the duck cages costs 10 percent--all of this constituting over 15 percent of the selling price. Last year, the duck farm created 600,000 KH dollars in foreign exchange for the state, but the rental for the duck cages alone took away 710,000 HK dollars, which was more than the state earned.

Adding the three figures, we saw that the duck farm had lost 1.8 million HK dollars in the year. This year, exports of meat ducks has doubled and the loss has increased. The loss is due to the poor links among production, supply, and marketing.

I asked manager Liu of the farm: "In your view, how can this be solved?" He said: "Our mistakes are, one, that we are not linked to the market, and two, that there are too many intermediaries. I hope to solve these three links: First, the Guangming Livestock Farm has several managers and several accountants who have the same freedom as the clients to go back and forth to Hong Kong to understand the market. Second, 'Guangming duck' can be arranged for export by the livestock farm under the supervision of the provincial Yuehai Company and can be sent directly to market. Third, the shipping forces of the livestock farm should be allowed to ship the ducks directly to Hong Kong and return with imported feed so as to ensure that 'Guangming duck' can be delivered to the client the same day. This will also recover several million HK dollars in transportation costs a year. The loss of the ducks and the cost of the feed will surely drop greatly."

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USE OF METEOROLOGY TO INCREASE RICE PRODUCTION STRESSED

Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 9, 10 Sep 81 p 24

[Article by Zhu Bolun [2612 0130 0243] of the Guizhou Tongren Prefecture Meteorological Station: "Viewing the Potential for Increased Yields of Paddy Rice in Our Prefecture From the Meteorological Viewpoint"]

[Text] Establishing a model for the relationship between the yield of crops and meteorological conditions serves a definite function in digging for meteorological potential and increasing crop yields.

I. The Model for the Meteorological Yield of Paddy Rice in Tongren

In meteorological respects, light, heat and water are the important factors for paddy rice growth and for yield. Water conditions are easily improved, but light and heat conditions cannot be changed. Therefore, when irrigation and fertilization and agricultural techniques and measures are satisfactory, the yeild of paddy rice changes according to the conditions of light and heat, i.e., the yield of paddy rice y is the function of total solar radiation Q and temperature T ($y - f(Q, T)$).

According to measurements by concerned units, over 80 percent of the yield of paddy rice comes from the accumulation of photosynthetic products after heading, while the intensity of photosynthesis is determined by the total solar radiation and temperature. Therefore, when irrigation and fertilization and such conditions are satisfied, the yield of paddy rice is mainly determined by the total solar radiation and temperatures during the period from heading to maturation. This article uses the empirical formula for the yield of Japan's paddy rice and meteorological conditions summarized by the Japanese Inner Islands Institute and combines it with experimental data to make appropriate adjustments and obtains the regressive equation of the relationship between the yield of paddy rice of this prefecture and light and temperature factors:

$$Y - 19.2\ Q\ (4.14 - 0.13\ (25.0 - T)^2)$$

Y is the meteorological yield of paddy rice, its unit is jin/mu; Q is the total solar radiation during the period from heading to maturation (called heading and maturation periods below), its unit is kilocalories/square centimeter; T is the average temperature during the heading and maturation periods.

The heading and maturation periods of paddy rice in our prefecture are generally from the first 10 days of July to the middle 10 days of September. Those of early maturing varieties are from the first 10 days of July to the first 10 days of August. Those of intermedidate and late maturing varieties are from the first 10 days of August to the first 10 days of September. Heading and maturation generally require 40 days. Over 80 percent of the paddy rice in our prefecture is intermediate and late maturing varieties, so this article has taken the period from 1 August to 9 September (40 days) as the heading and maturation periods of paddy rice in ordinary years, and has calculated the meteorological yields of paddy rice from 1970 to 1979 in Tongren Prefecture (See Table 1). The highest yield was 1,251 jin, the minimum yield was 975 jin, the average was 1,089 jin, the variation was 276 jin, and the relative variation was 25 percent. But viewing actual production, the yield of paddy rice is not stable enough: in the highest yielding years it reached over 800 jin, and in the lowest yielding years it reached only 400 to 500 jin; the relative variation was 50 to 60 percent due to the large variation in conditions of irrigation and fertilization.

II. The Time Distribution and the Most Suitable Heading and Maturation Periods of Meteorological Yields of Paddy Rice

The yield of paddy rice is mainly the result of photosynthetic accumulation during the heading and maturation periods. The meteorological conditions during the heading and maturation periods determine the meteorological yield. In a year, the meteorological conditions of each time period are different, so, the meteorological yield formed during the heading and maturation periods in different time periods is different. To understand the time distribution of meteorological yields of paddy rice and thus determine the most suitable heading and maturation periods of paddy rice in this prefecture, we divided the heading and maturation periods of paddy rice in the prefecture over the years into several time periods with 40 days as the unit. We also calculated the average meteorological yield of paddy rice of each time period according to the above formula and plotted the results. It can be seen from the diagram in Table 1 that the yields produced when the heading period of paddy rice in our prefecture occurs from the last 10 days of June to about 20 August are all relatively high, and the yield produced during the first 10 days of August is the highest. If the heading period is delayed until after the first 10 days of September, then the yield visible drops, and the later the heading period the more visible the drop in yield. This shows that the most suitable heading period for paddy rice in our prefecture should be set at about the first 10 days of August. Based on this, we conclude that in the flat regions of this prefecture we should select those varieties with a growth period of about 140 days to be sown between 5 and 20 April. This will produce the highest yield.

III. The Effects of Topographic Conditions Upon the Meteorological Yields of Paddy Rice

The topography of this prefecture is complex, there are many valleys, and there are visible characteristics of a mountain region climate. The paddy fields in this prefecture can basically be divided into three types: the flatland type, the valley type and the high mountain type. The sunshine conditions and tempera[illegible] onditions of these three types are visibly different, so their meteoro[illegible]l yields are also different.

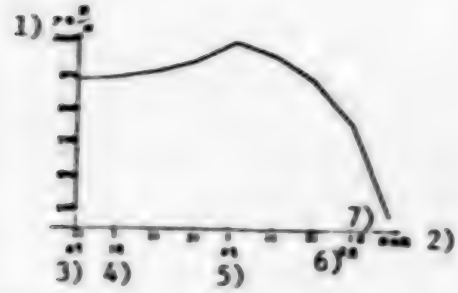

Table 1.

1	Yield jin/mu
2	Heading period
3	May
4	July
5	August
6	September
7	Day

The meteorological yield of valley fields is lower than that of the flatland. According to research, in rice fields of different degrees of shade, the ratio of total solar radiation is equal to the ratio of the degree of shade (or equal to the ratio of the actual number of hours of sunshine in clear weather at two localities). If we let the actual number of hours of sunshine in clear weather over valley fields be W, and the actual number of hours of sunshine in clear weather at Tongren (representing flatland) be W_1, then the meteorological yield in valley fields is:

$$Y = \frac{W}{W_1} Y_1$$ (Y_1 is the meteorological yield of paddy rice at Tongren)

Because $\frac{W}{W_1} < 1$, therefore $Y < Y_1$, i.e., the meteorological yield of paddy rice in valley fields is smaller than that in flatland.

As regards elevation above sealevel, according to calculations, the meteorological yield of paddy rice in regions below 600 meters above sealevel is similar to that in Tongren, but in the high and cold mountain regions more than 800 meters above sealevel, because the temperatures during the entire growth period of paddy rice are low, heading and maturation are visibly delayed, generally later than the last 10 days of August. The most suitable heading and maturation periods of paddy rice are different from the actual heading and maturation periods, neither the sunshine conditions or the temperature conditions are ideal, so the meteorological yields are lower. Therefore, in these regions, it is appropriate to select superior varieties with a relatively short growth period, and they should be sown early and transplanted early at appropriate times so that the heading and maturation periods can begin as early as possible. This is an important measure to increase the yield of paddy rice. In recent years, some localities have used the method of cultivating seedlings in flatland and transplanting them to high mountain land, thus causing the heading the maturation periods of paddy rice to occur early. Visible results of increased production have been obtained.

IV. Viewing the Potential for Increased Yields of Paddy Rice from Meteorological Yield

The difference between the meteorological yield and the actual yield is called the meteorological potential for increased yield. We know from the above that the average meteorological yield of paddy rice in the flatland regions of this prefecture over many years is 1,000 to 1,100 jin, while the actual yield is only 600 to 700 jin. This shows that there is still about 400 jin of potential for increases in yield that can be exploited.

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WAYS TO IMPROVE WORK OF AGRICULTURAL TECHNICIANS DISCUSSED

Shijiazhuang HEBEI RIBAO in Chinese 22 Oct 81 p 2

[Article by Lin Min [0536 2404]: "How Can the Work of Popularizing Agricultural Science and Techniques Be Done Well in the New Situation"]

[Text] Since the broad number of farm villages implemented the many forms of agricultural production responsibility system, new topics have been proposed for the popularization of agricultural science and techniques. The farmers urgently need to learn agricultural techniques, they urgently need superior varieties, but the basic level cadres in the farm villages mostly do not understand the new agricultural techniques and they are not prepared to develop agriculture by relying on science and to implement scientific planting. There are few technical cadres, the standard is low, and they are not able to meet the urgent need of the broad number of farmers to learn new agricultural techniques. In the Hengshui area, there are 320 technical cadres not engaged in production, slightly more than one per commune. Among them, college graduates constitute only 30 percent. There are few farmer technicians, the caliber is low, and the number of farming fields and seed propagation fields are few. The situation is not ripe for improving the caliber of the scientific and technical farming teams and the production of more superior varieties to satisfy the needs of farmers.

In face of this situation, how can we do the work of popularizing agricultural science and techniques well? Recently we went to the lower echelons to carry out a survey and held discussions with comrades in the counties, communes, and teams and related departments of the localities and counties and made the following five suggestions:

I. The leadership must be strengthened and the agricultural science network must be established well. For many years, the fourth-level agricultural science network has served a great function in experimentation, demonstration, popularization, and training of agricultural technical cadres, and has promoted agricultural production. This should be done well. First, the party and administrative leadership at each level must emphasize the work and strengthen leadership.

II. The farming fields of the communes and teams must implement the guideline of walking on two legs. The farming fields of the communes and teams are the place for experimentation, demonstration, popularization and training of agricultural technical cadres. They are also important places to combine the agricultural technicians and scientific experimentation and to improve the standard of work. Therefore, the farming fields should be managed well. At present, some farming fields of communes and brigades are not managed well; the main reason is financial loss, and the fundamental method to turn this loss around is to implement the guideline of walking on two legs. In the farming fields, besides grasping experimentation and seed propagation as the key points, they should also engage in diversification, or specifically engage in seed propagation to turn losses into profits. But they must prevent abandoning farming experimentation and seed propagation and engaging in commercial operations, as this would cause the farming fields to lose meaning. The farming fields must establish the responsibility system. The reason that some farming fields of communes and brigades have become bankrupt is that they did not establish the responsibility system and the practice of eating from the big pot continued. Therefore, in accordance with the practical experience of our region, two responsibility systems should be implemented: One is specialized contracts. The brigade should establish for the farming fields a schedule of total revenue (calculated according to production value) based on the revenue of ordinary years. The surplus can be used in two ways: 1) awarded proportionally to the individual; or 2) the money can be used to purchase work points. If total revenue is less than the established quota, the number of work points equivalent to the unearned monetary amount can be deducted as punishment. The second is to implement the comprehensive contract. The brigade can order the farming field to provide a certain percentage (calculated monetarily) to the brigade annually, with the remainder belonging to the farming fields; livestock can be converted into monetary value according to the amount of fat to protect the cost and the value.

But at present the farming fields of some communes and brigades implement the "four fixed quotas" (fixed land, livestock, farm tools, laborers), the work points are recorded for the brigades alone, and only the "four fixed quotas" are implemented while linking with production is not implemented; thus, it is easy for the farming fields to abandon experimental fields and plant only fields under their responsibility, unfavorable to scientific experimentation.

III. The seed beds must be made sound and the seed bases must be established well. At present, our region practices two methods: One is that the county and the production team sign contracts to establish seed bases. The contract stipulates: At the time of harvest, each jin of seeds submitted according to stipulated goals earns 2 jin in return. For those up to standard (the lowest reaching third grade seeds), the county seed station will procure them at 3 jiao per jin. The technical stipulation is that when one hybrid panicle does not joint in the seed propagation field, 1 fen is deducted per jin. The advantage of this method is that it raises the yield of seed propagation, assures the purity of the seeds, and increases the income of commune members. Leadership, techniques and land are concentrated, the conditions are good, and it makes it easy to establish quarantine regions well. The second is that the farming fields of the communes and the brigades or single sown fields can carry out seed propagation well in accordance with the amount of seeds of the agricultural crops used each year by the communes and brigades. The brigade implements specialized contracts for the farming fields or the seed propagation fields--1 jin can be exchanged for 1 jin--and then distributes the seeds to the production teams.

These two methods can both be implemented by suiting measures to local circumstances, but two things should be noted: First, a seed base must be established. Communes and brigades with favorable conditions should all establish seed bases after linking production to the laborer in the farming fields or single sown seed propagation fields. Concentrated establishment can solve the problem of quarantine regions and also make it convenient for the farmers, reducing agricultural investment. Second, specialized contracts should be implemented for all seed bases. The seed propagation fields must not simply carry out seed propagation for corn and sorghum; they must also engage in purification and strengthening of cotton and peanuts and propagation of primary seeds to solve the problem of mixed seeds.

IV. The policy of training farmer technicians must be implemented. The scientific and technical farmer teams are the backbone in carrying out the work of popularization of agricultural science and techniques well and teaching agricultural techniques to the broad numbers of cadres and masses. At present, some farmer technicians have entered other fields, mainly because the policies of science and techniques are not implemented and the pay is low. Some localities are trying to solve the problem as follows: First, a reasonable salary must be paid and the performance evaluated for promotion. The communes, following established conditions, can establish three grade levels covering all farmer technicians of the commune through ordinary evaluation and examination, and issue promotion certificates. The first-level personnel receive a salary equivalent to that of the deputy branch secretary of the brigade and the brigade leader. The second-level personnel receive a salary equivalent to that of the deputy branch secretary of the brigade and the deputy brigade leader. Third-level personnel are given work points for official leave to perform other duties, but at yearend they must fulfill the annual number of work points or the income level earned by midlevel laborers of the brigade. Some farmer technicians after being evaluated and promoted receive work point subsidies from the brigade and also receive additional subsidies from the commune. At the same time, all rewards enjoyed by the cadres of the brigades and teams should also be enjoyed by the farmer technicians.

But for the farmer technicians who have not yet been evaluated and promoted, they should at least be given subsidized work points up to the annual number of work points earned by the brigade's midlevel laborers and the income level at yearend when the books are closed in accordance with the situation and the scientific and technical caliber to overcome the situation of a comparatively low salary between the farmer technician and the cadres of the brigade and the lack of rewards. Second, the farmer technicians should have duties, rights and responsibilities. According to the experience of each commune and brigade of our region, the farmer technicians should participate in commune and brigade administrative committees according to their personal conditions; some can serve as brigade leaders or deputy brigade leaders; and the production team must have one deputy team leader concurrently serving as a farmer technician. But empty titles must not be given. Farmer technicians should all be allowed to participate in meetings discussing and studying production. Third, the farmer technicians should be mobilized to return to their brigades. Farmer technicians who have performed agricultural technical work for many years and who have done the work relatively well should be evaluated and promoted and mobilized to return to the brigade through the implementation of scientific and technical policies.

V. The training in agricultural techniques of the basic level cadres and farmers should be strengthened. After linking production to the laborer, the agricultural technicians of the communes and brigades should be present in the production teams to direct their attention to the cadres and farmers in order to teach agricultural science and techniques to the demonstration families and in the fields. First, the agricultural technical cadres of the county communes and brigades should all grasp well the model demonstration family. Second, the county communes should be separately trained or mobile guidance stations in agricultural techniques should be established in certain areas, and technical pamphlets that are easy to understand should be printed and distributed to the teams, the group and the commune members. Third, the communes and brigades should establish supplementary schools in scientific techniques for farmers. Young commune members with a high school education at the commune should be recommended by the party branch and should be examined in school to be admitted for half year sessions mainly to study six courses--plant physiology, plant protection, crop cultivation, genetic breeding, soil and agricultural chemistry, and business management--to learn to combine theory and practice, and to attend concentrated classes in the mornings and to return to the villages to carry out practice in production. In this way, a large number of farmer technicians can be trained.

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CSO: 4007/88

ZHANGJIAKOU PROMOTES DEVELOPMENT OF ANIMAL HUSBANDRY

Beijing RENMIN RIBAO in Chinese 9 Nov 81 p 1

[Article: "Leading Comrades of the Zhangjiakou Prefecture Committee Go Deep Into the Communes and Brigades To Inspect the Situation; Propose Concrete Measures for Developing Livestock Production in the Flatland"]

[Text] The leading comrades of Zhangjiakou Prefecture in Hebei Province went deep into the actual situation to conduct surveys and studies and talked with farmers about the major plan to change the situation of poverty in the flatlands.

The flatlands of Zhangjiakou Prefecture are part of the southern edge of the Inner Mongolian grassland. The weather is dry, the frostless period is short, and it is a region historically developed in livestock reproduction. But during the long period of the past 10 to 20 years, under "leftist" ideological influence, the grassland was blindly reclaimed and planted with food-grain crops, and thousands of mu of grassland were severely damaged. At the beginning of liberation, during the period of the campaigns, to encircle anticommunists, the cavalry of the People's Liberation Army "rode through the grassland and grass clinged to their shoes." But now the grass in some grassfields cannot cover the back of the feet. The masses say: "The food grains went down to the grassland, the grass went up to the mountains, and the cattle and sheep died." Food-grain production long remained low and in an unstable situation. Local community food-grain distribution during the 1950's was 909 jin per capita; it dropped to 809 jin during the 1970's.

What guidelines should be followed to develop production here? The Zhangjiakou Prefectural Party Committee decided to go deep into the actual situation and conduct surveys and studies to solve this problem during the course of implementing the spirit of the Sixth Plenum and purging the remnant poison of "leftist" ideology. The first secretary of the prefectural party committee, Comrade Zhang Shuguang [1728 2562 0342], who was assigned to his post not long ago, joined other responsible comrades, went to 23 communes and 28 brigades to talk to commune and brigade cadres, and visited 73 commune member families. A white-haired old shepherd said to them: "For the people living in border regions to live a good life, they cannot be without the 'steel' harvest (meaning livestock). Livestock does not fear drought and does not fear freezing weather, and the whole body is usable; it is all money." The leading cadres of the prefectural party committee also carefully read some county chronicles and studied historical evolution. They broke away from the standard ideological confines, started out from the actual situation according to the benefits to and opinions of the masses, and proposed ideas for the policy concerning production and management in the flatlands. On the basis of self-sufficiency in food-grain production, agriculture, forestry, and livestock production should be combined. Trees and grass should be planted to hasten the development of the livestock industry and to transform the situation into an economy centered around livestock production. They also proposed some specific measures:

1. Concretely implement the various forms of the responsibility system in agricultural production. The land should be contracted without change, the size of the plots should be limited, and the main effort should be to increase unit yields. When food grains are self-sufficient and there is a surplus, the fields should be returned as grassland. Within several years, the 2.5 million mu of "auxiliary fields" should be returned to grass and trees so that the land can become fallow in rotation.

2. The right to use the grazing fields should be fixed according to historical and current custom, a responsibility system for the grazing fields should be established, and a grassland management law should be set up. The collective should manage the presently available grassland and grass slopes well, under unified planning. Grass cultivation and livestock raising should be rotated, the grassland should be artificially renewed, and grasslands should be revived and built. General surveys of grassland and scientific research should be done well.

3. In the future, the major way to develop livestock should be for families to raise livestock. Under the prerequisite of retaining the necessary foundation of female livestock, production of commercial livestock products should be greatly developed, the number of livestock kept should no longer be limited and after the state procurement tasks are completed, trading of livestock should be allowed freely.

4. The planting of economic crops of sesame and flax and of sugarbeets should be increased to make up for the economic loss in food-grain harvests due to the return of low-yield fields.

At present, the snow is heavy over the flatlands and the masses are utilizing winter fallow to carry out discussions. The commune members say: "This method has finally touched our hearts."

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CSO: 4007/101

BRIEFS

XIANNING PREFECTURE PIG PROCUREMENT--According to HUBEI RIBAO: The principal leading comrades of Xianning Prefectural CCP Committee conducted inspections of pig procurement work. They found that some grassroots foodstuff departments stopped procurement once they had fulfilled the procurement quota, for fear that the procurement quota next year would be based on the amount procured this year. Having learned about this, the prefectural CCP committee ensured the peasants that the procurement quota would not be based on the results of the previous year and encouraged the peasants to overfulfill the procurement quota. At present, five counties have fulfilled the year's procurement of pigs ahead of schedule. [HK250733 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 13 Dec 81 HK]

CSO: 4007/141

BRIEFS

BAYAN COUNTY CROPS--Harbin, 19 Dec (XINHUA)--Bayan County, Heilongjiang Province, has overcome serious natural calamities and reaped an all-round agricultural bumper harvest this year. The county's total output of grain and soyabeans exceeds 1.05 billion jin, or more than 10 percent than in 1980. As of now the county has delivered 605 million jin of grain to the state. [OW271443 Beijing XINHUA Domestic Service in Chinese 0119 GMT 19 Dec 81 OW]

CSO: 4007/141

RESTRUCTURING FARMING SYSTEM ON JIANG-HAN PLAIN DISCUSSED

Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 10, Oct 81 pp 22-24

[Article by Xu Kepiao [1776 0344 3343] of the Haokuo stock seed farm of Jinzhou Prefecture: "Viewing the Reform of the Planting System in the Jiang-Han Plain from the Viewpoint of Climatic Characteristics"]

[Text] The Changjiang-Hanshui Plain is the nation's major food grains and cotton producing region. The soil here is fertile, the rainfall is abundant, the four seasons are distinct, rain and heat are present in the same season, and the natural conditions for agricultural production are good. But at present, the realization of crop yields relies mainly on the broad land and the fertility of the soil, while there is still a lot of potential for the utilization of additional water and heat resources. To open up new roads to increase yields, this article will emphasize the analysis of the climatic characteristics of this region and explore the problems of reforming the planting system in the Jiang-Han Plain on this basis.

I. Climatic Characteristics of the Jiang-Han Plain

According to meteorological data of the past 16 years provided by the Qianjiang County Meteorological Station, let us first analyze this region's unfavorable climate, such as severe cold, extreme heat, plum rains, summer drought and the "south seas winds" that occur during the middle 10 days of July. Here, summer with both rain and heat present in the same season is affected by high temperatures, while spring and autumn, when the sunshine and temperature difference are great, are easily affected by low temperatures, thus seriously affecting the development of the potential to increase the yields of presently available crops. For example, the unit yield of winter wheat in our region is very low. In recent years, although some new techniques of cultivation have been used, the per mu yield is only about 300 jin. The main reason for low yields is that the flowering and filling periods of winter wheat are affected by more rain and less sunshine. The unit yields of early maturing intermediate rice and second season late rice are also not high. The reason is that the former is damaged by high temperatures during the flowering and filling periods, the latter is easily affected by low temperatures during the flowering and filling periods. These factors of natural forces are difficult to change and resist immediately. Even though people have exerted great efforts, the economic gain has not been high.

Now, let us look at the periods of favorable meteorological factors in our region. These are the two periods of large temperature differences centered around 25 April and 25 October. The greatest temperature differences during these two periods are respectively 10.6°C and 10.5°C. During these two periods, there are more clear days, sunshine is relatively strong, the temperature difference is relatively large. In particular, the period of large temperature differences before and after 25 October is the golden season of the whole year when light energy can be fully utilized. Within the temperature range suitable for the growth and development of crops, the differences in temperature greatly affect the yields. According to the data, an important reason for the high yields of wheat in the north, in Xizang and in the Tsaidam Basin is that the temperature difference there is often as large as 15°C. Temperature difference is also closely related to the thousand grain weight of paddy rice. For the same variety, the thousand grain weight is 25 grams when the temperature difference is between 6.6°C and 7.1°C. When the temperature difference is between 7.9°C and 8.0°C, the thousand grain weight reaches 26.4 grams. Our region's early rice and late intermediate rice (or early maturing first late crop, same in the following) can produce high yields more easily than early and intermediate maturing intermediate rice and second season late rice because of the temperature difference. Therefore, fully utilizing these two "periods of large temperature difference" should be an important basis for reforming the planting system in our region.

II. Separating the High Yielding Period and Unfavorable Period

The period with meteorological factors favorable to flowering and filling of rice and wheat is defined as the high yielding period, and the period with meteorological factors unfavorable to the flowering of paddy rice and the growth of wheat is defined as the unfavorable period. According to these definitions, we will divide the whole year specifically into six periods (see Table 1).

It can be seen from Table 1 that when the major meteorological factors of two high yielding periods of wheat are close, so are the two high yielding periods of paddy rice. Among the factors, the meteorological factors of the high yielding period of autumn wheat are superior to those of the high yielding period of winter wheat. The meteorological factors of the high yielding periods of late intermediate rice are superior to those of the high yielding periods of early rice. Each of the two unfavorable periods has its own characteristics: In the unfavorable period of high temperatures, the temperature is too high and the temperature difference is too small, which are unfavorable to the flowering and fruiting of paddy rice, but the number of hours of sunshine during this period is especially high. In the unfavorable period of low temperatures, the temperature is too low, the daily number of hours of sunshine is the smallest, and ordinary crops stop growing.

Now, let us analyze the meteorological conditions of the entire growth period of several agricultural crops available at present. From Table 2 we can see that for paddy rice, the daily number of hours of sunshine of early rice and late intermediate rice is the same as that of second season late geng rice, that of intermediate rice is similar to that of first season late geng rice, but that of the latter two is higher than that of the first three. The number of clear days and the active cumulative temperatures of the varieties are basically similar except for those of early rice, which are lower. The average 10-day temperature is almost the same for each season of rice crops. For wheat, the various meteorological factors of autumn wheat are visibly superior to those of winter wheat and spring wheat (see Table 2).

III. Ideas and Preliminary Implementation of Reforming the Planting System of the Jiang-Han Plain

After analyzing the climatic characteristics of this region and the high yielding periods of several agricultural crops and the unfavorable periods, the direction of reforming the planting system should be relatively clear. In the past, some reforms had already developed in this direction, such as changing the intermediate xian to one season late geng, changing one season late geng to late maturing intermediate xian, and a combination of double cropping of wheat and rice and double cropping of paddy rice. But the direction of major efforts is still not clear and the corresponding varieties and production conditions have not caught up. With a view to developing the advantages, avoiding the shortcomings and fully developing the superiority of the natural conditions of the locality, we believe:

1. Since the flowering and filling periods of winter wheat are easily affected by more rain and less sunshine and there is a relatively long unfavorable period of low temperatures during the growth period, should we develop toward spring wheat? This is worth studying.

2. Early xian is high yielding, the daily yield of guangluai No 4 can reach 8 to 10 jin. This is because most of the growth period of early xian falls within the first high yielding period of paddy rice. But the sowing time is easily affected by low temperatures, and the maturation time may be affected by high temperatures. Therefore, we must study the techniques and measures of cold-resistant cultivation of seedlings to solve the problem of cultivating early seedlings and healthy seedlings.

3. Early rice can more easily produce high yields--this is recognized by everyone. But planting early rice while not reviving the late crop is not worthwhile. Reviving the late crop at a high cost with a low yield is still not worthwhile. Thus, the situation has forced the emergence of double cropping of wheat and rice and expanding the late maturing intermediate xian "691." Massive production practice proves that 691 is indeed a high yielding and stable yielding variety. In some places, the single season unit yield has already reached the level of the yields of ordinary double season rice. Also, its present potential for increased yield is still great. It should be combined with winter wheat or spring wheat to form a double cropping system of wheat and rice. This should be used as the main planting system in this region and should be firmly established and perfected. One of the reasons late maturing intermediate rice can realize high yields is that its latter growth period falls within the second high yielding period of paddy rice. Early and intermediate maturing intermediate xian cannot avoid high temperatures, the light saturation point of the late maturing single season late geng is low. These crops are unfavorable to the aftercrop and they should be and already are being gradually replaced.

Table 1. Meteorological Factors of the High Yielding Periods and Unfavorable Periods

Name of period	Starting and ending time (month/day)	No. days of period	10-day temperature variation (°C)	Extreme temperature variations (°C)		Sunshien		Temperature difference (°C)			Maximum temperature difference	
				Highest	Lowest	Total number of hours	Daily number of hours	Variation	Total value	10-day average	(°C)	Time of occurrence month/ 10-day period
High yielding period of winter wheat	4/10-5/30	60	13.5-22.9	31.3-34.6	0.2-12.6	302.1	5.0	8.6-8.9	52.7	8.8	10.6	4/middle
High yielding period of early rice	5/10-7/10	70	19.5-27.5	32.5-36.4	6.5-18.0	442.7	6.3	8.3-7.1	57.0	8.1	8.9	5/last
High yielding period of late intermediate rice	8/20-9/30	40	27.0-20.5	37.5-33.4	19.4-9.2	259.5	6.5	9.0-9.1	36.2	9.1	9.2	9/middle
High yielding period of autumn wheat	9/20-11/10	60	22.3-13.3	34.3-26.3	12.5-1.6	305.5	5.1	9.2-8.6	56.3	9.4	10.5	10/last
Unfavorable period of high temperatures	7/20-8/10	30	28.4-28.7	37.9-37.5	18.5-20.6	282.9	9.4	7.6-8.4	23.2	7.7	8.4	8/first
Unfavorable period of low temperatures	12/30-1/30	40	3.8-3.5	19.5-22.1	-6.2-12.6	16.25	4.1	7.5-8.0	32.0	8.0	8.6	1/first

Table 2. Meteorological Conditions During the Growth Period of Different Rice and Wheat Crops

Name of crops	Sowing to maturation (month/day)	Full growth period (days)	Active cumulative temp / (°C)		Sunshine		Clear Days		10-day average temperature difference
			Total cumulative temperature	Daily average	Total number of hours	Daily average	Total number of days	Daily average	
Winter wheat	10/20-5/30	220	2073	9.4	832.8	3.785	65.9	0.30	8.79
Spring wheat	2/10-5/30	110	1521	13.8	492.8	4.480	27.3	0.25	8.72
Autumn wheat	8/20-12/10	110	1854	16.8	588.6	5.351	43.0	0.39	9.20
Early rice	3/20-7/30	130	2840	21.8	821.9	6.322	47.7	0.37	8.33
Intermediate rice	4/10-8/30	140	3260	23.2	995.2	7.108	57.8	0.41	8.32
Late intermediate rice	4/20-9/30	160	3934	24.5	1071.5	6.696	69.4	0.43	8.46
Early maturing first late geng rice crop	5/20-9/30	140	3349	23.9	1016.9	7.263	64.6	0.46	8.40
Second season late geng rice crop	6/20-10/30	130	3131	24.0	861.1	6.623	63.0	0.48	8.60

4. Spring wheat requires a total of 110 days from sowing to maturation (20 August to 10 December). The growth period is much shorter than that of winter wheat, but it falls in the golden season of good weather in autumn, the meteorological conditions are very favorable to the growth of wheat, and it should have the possibility of becoming an important single season food grain crop in our region. According to the practice of planting autumn wheat for 2 years by this writer, I have obtained 37 full grains per spike and the thousand grain weight even reached over 50 grams. Therefore, if a definite number of spikes can be assured, autumn wheat can produce high yields. If autumn wheat can be successfully test planted, it can be coupled with early soybeans, early sesame or early rice in a double cropping system.

5. The temperatures during the high temperature period in summer are too high, the temperature difference is small, but the number of hours of sunshine is especially high, so crops that are not planted for harvesting fruits can be planted, and green manure can also be planted. During the winter low temperature period, ordinary crops stop growing. A portion of the fields can be allowed to dry in winter to hasten maturation of the soil. During the two unfavorable periods of severe cold and extreme heat, we can nurture the land and create fallow land. In this way, not only can all crops develop their advantages and serve their functions, the soil can also be used to allow a combination of nurturing and utilizing the land so that soil fertility can continue without change.

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BRIEFS

YIYANG PREFECTURE'S NEW CHANGES--Changsha, 18 Dec (XINHUA)--The various forms of responsibility systems for production have brought about profound changes to Hunan's Yiyang Prefecture over the past year. Grain output this year is expected to reach 4.7 billion jin, or an increase of 350 million jin over 1980. [OW271443 Beijing XINHUA Domestic Service in Chinese 0054 GMT 18 Dec 81 OW]

CSO: 4007/141

FULL UTILIZATION OF WATER, SOIL RESOURCES EMPHASIZED

Nanjing XINHUA RIBAO in Chinese 12 Oct 81 p 2

[Article: "Fully Utilize Untapped Water and Soil Resources"]

[Text] "Never relax food grain production, actively develop diversification"--this is the correct policy of our party in developing agriculture. Our province has a dense population and the culitvated land is insufficient. The whole province has only a little over 70 million mu of cultivated land; in per-capita average, some county communes have less than 1 mu, and some commune brigades have only one-half mu. If we limit ourselves to this area of cultivated land, we may not be able to insure a stable increase in food grain production, and diversified production may be difficult to develop greatly. Then, can diversification in such a place with little land and many people achieve greater development? The answer is affirmative. This has already been proven by the experience of many advanced units.

Although the area of cultivated land in our province is limited, there are a lot of water surfaces, hilly regions, beaches, and small plots of land by the side of houses, roads and ponds that are still left unclaimed and not utilized. Of the 26 million mu of water surfaces in the province, there are 6 million mu of water surfaces that can be used for cultivation. Four million mu have been utilized, but there are still 2 million mu that have not been utilized, mainly medium and small lakes and river channels. Of the water surfaces already cultivated, most are used for simple fish culture and the unit yield is low. Of the over 20 million mu of low mountains and hilly regions and the 7.59 million mu of land suitable for forestation throughout the province, over 1.5 million mu have not been planted. Among the presently exisitng expanses of forests, there are 1 million mu of sparse forest land and low-yielding forests. The production rate of forest timber is very low. The whole province has over 1,000 kilometers of coastline, and there are 3 million mu of beaches that can be utilized in the near term. North and south of Changjiang throughout the province, there are many slopes of interwoven rivers, canals, ditches, roads and embankments, beach surfaces, green ridges everywhere which are important places to plant trees and mulberry, grow timber for firewood and plant grasses and develop diversification. According to estiamtes, these total about 6 to 7 million mu that have not been utilized well. According to analysis by model units that have utilized such land well, if the land can be fully utilized, each person can receive an additional income of 10 to 20 yuan per person throughout the province.

Fully utilizing the various water and soil resources to develop diversification first requires overcoming the onesidedness in ideology. We must look at the mountains, look at the waters, see that the broad mountains, waters, and field embankments are all treasures; we must not fix our sight on the limited few mu of cultivated land. At the same time, we must implement related policies, fully mobilize the enthusiasm of the collective and the commune members. At present, we must especially pay attention to the development of the enthusiasm of the individual. We must clarify the ownership and the right of utilization of mountain forests and water surfaces. The bamboo and trees planted in places designated by the production teams and in front and in back of houses of commune members belong to the commune individuals, and they can be inherited. Water surfaces in front of homes and scattered water surfaces can be zoned to families or managed jointly so that the person who cultivates and manages the water surfaces gains. Some can sign contracts with the collective to share the gain or submit a part of the accumulation to the collective. The scattered wasteland, small plots of land by the side of houses, roads and ponds, and slopes of ditches and ponds that belong to the collective of the production teams can be contracted to families and to laborers for fixed-quota contracts, and the workers and families can keep the surplus yields. The state-run farms and forestry and livestock farms can also contract the unutilized water and soil resources within the farm to the workers to manage; the profits can be shared and the system can be implemented for several years without change. In general, by correctly implementing the guidelines and policies of the party since the Third Plenum, mobilizing the enthusiasm of the broad masses, and fully utilizing the water and soil resources, a new situation will emerge in diversification.

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CSO: 4007/90

HOUSEHOLD CONTRACTING SYSTEM CREDITED WITH VAST INCREASES IN GRAIN OUTPUT

Beijing RENMIN RIBAO in Chinese 7 Nov 81 p 1

[Article: "A Year of Great Upswing With Per Household Grain Outputs of More than 3,000 Tons; Grain Output Totals More than 500 Million Jin as 10-Year Battle Objective is Realized Ahead of Time; Xuyi County Institutes Contracting with Individual Households in Response to the Will of the Peasants"]

[Text] In Jiangsu Province's notoriously poor county, Xuyi County, the 1990 battle goal for grain production has been realized in 1981 in the midst of hearty laughter on the part of the peasantry.

When formulating production plans this spring, this county noted that by 1985 the county wanted a grain output of 450 million jin followed by annual incremental increases of 10 million jin to achieve an output of 500 million jin by 1990. With the conclusion of this year's autumn harvest, grain output for the county unexpectedly totaled more than 510 million jin, a 40 percent increase over last year, advancing by 10 years the originally designated battle objective. The province's output of oil-bearing crops and cotton also registered twofold and threefold increases, respectively. Commune member earnings from collectively owned land vaulted from last year's average 60 yuan per capita to 136 yuan for an increase of more than 100 percent.

Here a vista of bumper grain harvest exists. In the county's 22 communes and more than 2,800 production teams, except for one production team that had reduced yields as a result of failure to institute a system of responsibility for production, increases in output occurred in every commune and team. There were eight communes that had grain output increases of 5 million jin. One-fifth of the 80,000 peasant households produced grain outputs of more than 10,000 jin for an average grain output of more than 3 tons per household. Grain sold to the state by the county amounted to more than 100 million jin, twice the amount of last year.

Xuyi County has mountainous regions, hills, and plains. If there is not a drought in one place, there is waterlogging in another. Grain output has at no time since Liberation reached 400 million jin, and annual average commune member income has been stalled for a long time at around 40 or 50 yuan. In 1976, the County CCP Committee put forward a battle objective of "400 million jin of grain and double the output of cotton." This slogan was shouted for 4 or 5 years, but grain production did not increase. Beginning with fall sowing last year, acting in accordance with the Central Committee's policies and the demands of the peasantry, the County CCP Committee began gradual implementation throughout the county of systems of responsibility in which contracting with individual households was the predominant one. This summer, the county government also put up announcements throughout the county calling for the consolidation and perfection of systems of responsibility to encourage commune members to hug the "golden baby," and stipulating that increased production would bring no increased requisition procurement or no increased withholdings, nor would the increase be used as a base for figuring next year's quotas for contracting output. If cadres failed to carry out these provisions, commune members could make the facts known and lodge a formal complaint with the county. Boldly and assuredly, the broad masses of peasants set to work in earnest, the number of production teams in the county instituting contracting work with individual households numbering more than 90 percent. After a year's work, slogans that had for long been only shouted became a reality in attainment of what had been envisaged for 1990.

9432
CSO: 4007/103

BUMPER HARVEST OF APPLES REPORTED THROUGHOUT PROVINCE

Nanjing XINHUA RIBAO in Chinese 14 Oct 81 p 2

[Article: "Implement the Responsibility System To Strengthen Management of Fruit Orchards; the Total Yield of Apples Throughout the Province Will Reach 130 Million Jin"]

[Text] Apple orchards, which constitute one-third of the area of our province's fruit orchards, have realized a big bumper harvest this year under careful cultivation by the broad number of fruit orchard workers and fruit farmers. The total yield of apples throughout the province will reach 130 million jin, an increase of 34 percent over last year.

The bumper harvest of apples this year was characterized first by an overall increase in yield. An overall increase in yield has been realized this year in the three prefectures of Xuzhou, Huaiying, Yancheng and the ports and cities of Xuzhou and Lianyun which are major apple-producing regions. The 48 mu of jinshuai and yuanshuai apples of the fruit orchards of Paoche Commune in Xinyi County produced an average per-mu yield as high as 10,186 jin. The second characteristic was improved quality. The percentage of good apples was above 80 percent, an increase of 10 to 20 percent over past years. The percentage of good apples of the Siyang fruit orchard reached 99 percent. The apples were uniform in shape, the surface was clean, the color was good, they were not diseased or damaged by insects, and the sugar content was high. The third characteristic was broad sales and high productive value. Among the fruit sold by the units themselves, 40 percent was sold locally and 30 percent was sold outside the province and city. Many fruit orchards did not have enough to sell. Apples on the trees were ordered even before they were picked. Because of the increased yield, production and sales were directly linked, the intermediate links were reduced, the consumer could eat inexpensive and good apples, and the producers also achieved increased income. The productive value of fruit of two prefectures, Huaiying and Yancheng, is estimated to have increased 40 percent over last year.

One of the important reasons for this year's bumper harvest of apples was that each locality implemented the various forms of production responsibility system. This system was established in 99.7 percent of the 2,060 fruit orchards of the communes and brigades in Xuzhou Prefecture. After Shuqian County implemented the production responsibility system, the fruit farmers learned techniques and improved the level of scientific planting of fruit. They conscientiously carried out artificial pollination of fruit trees, thinned the flowers and the fruits, irrigated and applied fertilizers, prevented disease and controlled insects, and the total yield of apples throughout the county increased onefold over last year; the average per mu yield was 1,420 jin, the best level in history.

Our province is located on the southern edge of the apple cultivation zone. There are early, intermediate and late maturing apples. The early maturing "huang kuai" and "zu guang" are suitable for cultivation in our province. They are the earliest maturing varieties of apples in our nation. They can be marketed before watermelons during the middle 10 days of July. The intermediate maturing "jinshuai," "yuanshuai," "hongxing" and "hongyu" apples picked in August and September have a high yield, the quality is good, and the taste is good. The late maturing "qing xiang jiao" and "xiao guo guang" have a good color, the sugar content is high, the taste is good, they can be stored, and they mature just before or after the National Day. At present, fruit orchards in each locality are concentrating on postmanagement of late maturing fruits and are preparing for the harvest to supply the market.

9296
CSO: 4007/90

COUNTY PRAISED AS EXAMPLE IN HOUSEHOLD RAISING OF RABBITS

Nanjing XINHUA RIBAO in Chinese 17 Oct 81 p 1

[Article: "Grasp Production of Domesticated Rabbits Well Like Wujiang County"]

[Text] Wujinag County procured over 290,000 jin of rabbit fur between January and August this year. There were 12 communes that procured over 10,000 jin of rabbit fur. Miaogang Commune procured over 32,400 jin. But during the same period, the whole province had 25 counties that procured less than 1,000 jin of rabbit fur.

Of course, each locality has its traditional domesticated animals. Some counties raise hogs, some raise cattle, some raise sheep, and some raise fowl. But in those counties that do not raise a lot of other animals, rabbit raising has not developed well. What is the reason? Comparing the experience of Wujiang, it seems that some comrades in those counties do not place sufficient emphasis on developing rabbit raising as the county committee of Wujiang has. Some comrades always believe the contributions of carrying out agricultural production well are great, they will be known and the production will be honorable no matter how many rabbits are raised, so they seem to neglect the task of raising rabbits. In fact, there are many advantages to raising rabbits. They are: less investment, conservation of materials, quick propagation, good sales and high gain. It is a sideline that every family can carry out. Rabbit fur as a "special fiber" is "cotton that does not occupy cultivated land"; it is a commercial product that sells well abroad. Rabbit meat has a low fat content; rabbit skin is a good material for keeping warm and it can be used in a tannery. The placenta, gall, spleen, testicles and brains of the rabbit are pharmaceutical raw materials. Rabbit excrement is superior quality organic fertilizer; the contents of nitrogen, phosphorus and potassium are respectively higher than those in hog manure ash by threefold, fourfold and over onefold. The excrement of 10 rabbits equals the amount of fertilizer provided by one pig. As to the nitrogen content in rabbit excrement, raising 1 million rabbits is equivalent to operating a chemical fertilizer plant with an annual production of 10,000 tons. In a certain sense, undertaking rabbit raising is undertaking food grains and cotton. Wujiang County kept 670,000 fur rabbits last year. The rabbit fur, breed rabbits, and rabbit excrement sold by the commune members produced an economic income of over 8.7 million yuan, averaging 53 yuan per farm family. Developing the raising of rabbits has major significance in promoting agricultural production, supporting exports in foreign trade, increasing the income of the collective and the commune members, and making the farm village economy prosperous. It is hoped that the comrades of the localities that have not developed rabbit raising will conscientiously grasp this business which benefits the nation and the people by hastening the level of construction for agricultural modernization and by recognizing the importance of raising rabbits.

The development of rabbit raising is like the development of other businesses. The leadership at each level must undertake the task conscientiously. The results are not the same if the task is not undertaken conscientiously. The leadership of the county committee of Wujiang is a good model is conscientiously undertaking rabbit raising. They realized a big development in rabbit raising by helping the collective and the masses solve many practical problems, by implementing relevant policies and by seeking breeding sources, techniques and capital. We should be inspired by the experience of Wujiang County. This means that we must conscientiously carry out unified planning and rational distribution. Not only must we have general slogans, propaganda and initiative, but we must also personally grasp the key points, use the models as a guide; we must first establish points, then popularize and progress steadily; we must popularize in one region and make it a success in that region. We must do the work of regulating and supplying the varieties of domesticated rabbits well, establish a system for the propagation of superior varieties, popularize artificial insemination, utilize heterosis, let the masses realize more gain by feeding superior breeds of rabbits, and thus maintain and increase their enthusiasm for rabbit raising. We must train the rabbit raising technical team to teach raising and management techniques and pay attention to grasping well the prevention and control of rabbit diseases from the start. We must help do the work of gathering, planting and storing feed well, make it convenient for the masses to sell rabbit fur, rabbit skin and rabbit meat. We must also unify the forces of diversification, supply and marketing, foreign trade, food grains and livestock production, and veterinary medicine and science and technology, clarify division of labor and realize close cooperation; everyone should perform his duties and support the production of domesticated rabbits together. Such work cannot be done carelessly; only by truly undertaking the tasks well can there be results.

Our province's rabbit raising business can develop greatly. In the past 3 years, the yield of rabbit fur in Wujiang County started at only a little over 60,000 jin, but it developed to over 100,000 jin and then over 280,000 jin. Like Wujiang, the natural conditions and material foundations in the regions north and south of Changjiang in our province are relatively good for raising rabbits. The masses of many localities have the custom and experience in raising rabbits. The series of policies and guidelines of the party since the Third Plenum have entered the hearts of people; the enthusiasm of the masses to develop diversification is very high. Therefore, in order that the production of rabbit raising can achieve great development, correctly handling the policy, guideline and related measures to develop the production of rabbit raising is still a key problem. In the guideline to develop production of rabbit raising, we must clearly take "private raising as the key" to exploit the potential of the thousands and tens of thousands of families. Localities that have favorable conditions for the development of rabbit raising must also implement the responsibility system of "special contracts and linking production with remuneration," suit measures to local circumstances, and use the management method of "teams having families to raise rabbits" and "raising rabbits by specialized families and specialized workers." The sense of responsibility of the commune members must be strengthened to develop their creativity and increase economic results. We must also handle well the policies concerning feed, fertilizers and subsidies for awards and sales in rabbit raising. We must insure that the commune members can gather and plant green feed, and the collective must treat rabbits as equal in the distribution of animal feed grasses. When procuring rabbit fur and rabbit meat, the prices must be reasonable, the policies of awards and sales must be stable and must be adhered to, and the commune members and the collective must not be shortchanged. If we insist on carrying out a rational and stable policy, the entire province's rabbit raising production will achieve greater development.

9296
CSO: 4007/90

JIANGSU

BRIEFS

XUZHOU PREFECTURE AGRICULTURAL PRODUCTION--The masses in Xuzhou Prefecture, Jiangsu Province, reaped a bumper harvest of grain and oil-bearing crops this year. The total grain output exceeded 7 billion jin, increasing by more than 400 million jin over that of 1980. The total output of oil-bearing crops increased by more than 30 percent as compared with that of 1980. The procurement tasks for grain and edible oil for 1981 have already been fulfilled. More than 1.37 billion jin of grain and 36 million jin of edible oil have been delivered to state warehouses. [OW231213 Nanjing XINHUA RIBAO in Chinese 12 Dec 81 p 1 OW]

XUYI COUNTY BUMPER YIELD--Jiangsu's Xuyi County has produced 510 million jin of grains this year, an increase of 140 million jin over 1980. Among the county's 80,000 farming households, some 20,000 have produced more than 20,000 jin each. Average per capita income exceeds 135 yuan, doubling that of 1980. [OW231213 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 16 Dec 81 OW]

HONGZE COUNTY PRODUCTION ACHIEVEMENTS--Thanks to the establishment of production responsibility system in various forms, a bumper yield of agricultural production and fishery has been registered in Jiangsu's Hongze County. Grain output reached 420 million jin, topping 1980 by 14 percent. Some 18 million jin of fish were caught in the first 10 months of 1981, an increase of 5 percent over the same period of 1980. [OW271443 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 17 Dec 81 OW]

CSO: 4007/141

USUALLY GRAIN SHORT PREFECTURE REPORTS BUMBER HARVEST

Beijing RENMIN RIBAO in Chinese 22 Oct 81 p 4

[Article: "Grain Short Gannan Prefecture Has Bumber Harvest This Year. Policies Implemented Early; Zeal of Masses High: Weather Helps During Extremely Busy Seasons"]

[Text] Gannan Prefecture in Jiangxi Province, which has historically been grain deficient, this year experienced not only an all-around increase in output of economic crops but also had a bumber grain harvest. Now grain prices in farmers' markets have dropped, and rural consumption grain quotas have risen from the former 300 to 400 jin to 550 jin putting an end to a history of grain sold back to the county by the state. The formerly three-dependencies poverty stricken areas of Xingguo, Huichang, Xunwu, Longnan, Dignan, and Quannan counties have changed even more remarkably. In Xingguo County, early rice output increased by more than 10 percent, and income from collective and commune member sideline occupations combined is likely to increase by 30 yuan. All around tremendous increases occurred this year in Gannan Prefecture's output of major economic crops such as sugarcane and oil-bearing crops (including rape, peanuts, and tea oil), flue-cured tobacco, cotton, citrus, tea, and local specialties (red melon seeds and white lotus seeds). Rape output increased 61 percent over last year and peanuts by 500,000 dan, a 17.8 percent increase over last year. Tea-oil trees hang heavy with seedpods, and an increase in output is a foregone conclusion. Particularly heartening was that, despite a 77,000 mu reduction in the rice growing area, output increased by 160 million jin, a 7.9 percent increase over last year. A group of production teams and peasant household in which "high output has become higher output, medium output has greatly increased, and low output has increased several times over" have emerged. In the Zhoutian Commune in Huichang County, early rice yields were 41 percent higher than last year; and, in 5,771 households, output from the early rice crop was greater than output for all of last year. In 22 households, single season output was greater than for 2 years. Throughout the prefecture, livestock raising and aquatic product hatching, particularly the household hatching industry, have developed rapidly. Statistics for August show privately owned cattle totaling 57,629 head, a fivefold increase over the same period last year, a 44.2 percent increase in the raising of rabbits, and a 25 percent increase in beekeeping. Raising of rabbits, poultry, and fish and keeping of bees is at an all-time high. The masses have summarized the reasons for this year's all around bumper harvest in agriculture as follows: "This year policies were put into effect early; the zeal of the masses was high; manure was ample; varieties were very good; and the weather helped during the busy seasons."

Gannan is one of the regions in Jiangxi Province where contracting jobs with individual households and contracting production with individual households in a system of responsibility in agriculture was done earliest and to a very large extent. To an extremely large extent, these two systems of responsibility have aroused the enthusiasm for production of commune members.

9432
CSO: 4007/103

BRIEFS

JIAN PREFECTURE GRAIN PURCHASE--As of 11 December, Jian Prefecture, Jiangxi, had overfulfilled this year's grain procurement tasks. Grain put in storage topped the same period last year by 136,330,000 jin. The prefecture's total grain output this year increased by more than 300 million jin over that of the last year. [OW231213 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 15 Dec 81 OW]

CSO: 4007/139

WAYS TO MAKE STATE FARMS PAY THEIR OWN WAY EXPLORED

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese No 10, 24 Oct 81 pp 6-7

[Article by Liaoning Provincial State Farms and Land Reclamation Bureau, and Liaoning Provincial Department of Finance: "Strengthen Fiscal Management To Promote a Turn Around of Losses to Increased Profits"]

[Text] Liaoning Province's state farm and land reclamation enterprises are now located at 126 places on an area totaling 7 million mu, 1.7 million mu of which is cultivated land, 180,000 mu of which is orchards, 300,000 mu of which is reed fields, and 460,000 mu of which is grasslands, plus broad expanses of coastal beaches. Staff and workers number 290,000.

In 1980, output of grain and beans totaled 987 million jin. Grain yields averaged 714 jin per mu, and the quantity of commodity grain produced was 450 million jin for a 45 percent commodity rate. Fruit output was 110 million jin. Milk output was 59.8 million jin. Total output value was 493 million jin, an 11.7 percent increase over the previous year. Profits totaled 35.8 million yuan. Profitable farms numbered 94, producing profits of 42.76 million yuan. Losing farms numbered 32, losses amounting to 6.98 million yuan.

Thoughout this year, we have taken a firm grip on readjustment of state farm and land reclamation enterprises, greatly strengthening farm leadership groups, diligently instituting various forms of a system of responsibility for production, and actively launching economic diversification. The situation on farms is very good, and it is estimated that results for their operation will be better than during the previous year. In fiscal management we gave attention principally to the following several items:

1. Assignment of fiscal responsibility, strengthening of management over assignment of responsibility for cash surpluses, and full effectiveness from funds.

In 1976, Liaoning Province set up assigned fiscal responsibility pilot projects for state farm and land reclamation enterprises, extending them throughout the province in 1978. Prior to the establishment in 1976 of assigned fiscal responsibility, annual losses averaged more than 30 million yuan. Following institution of assigned fiscal responsibility and expansion of decision making authority in enterprises, enthusiasm of enterprises was aroused, and throughout the province losses turned into profits. In the course of 5 years, a total of 110 million in assigned responsibility cash surpluses was realized. This is a major source of capital for use by the state farm and land reclamation enterprises to change production conditions, expand production, and to turn losses into profits. Careful management and use of these funds is an important task. Cash surpluses from assigned responsibility did not amount to much during the first and second years when surpluses from assigned responsibility were used in rather diffuse ways, results obtained not being very outstanding. In some cases there was rashness in mounting projects, and in other cases a lot of distribution and little accumulation took place. In order to solve these problems, beginning in 1978 we adopted two measures as follows: Designating the limitations on use of surpluses derived from assigned responsibility in enterprises, requiring that they be used first to solve long standing problems, such as intellectual youths sent to the countryside overspending and incurring debts to build houses, and cost overruns in the building of messhalls for young people, which represented capital construction outside plan of more than 30 million yuan. Next was use of 50 to 60 percent of assigned responsibility cash surpluses for improvements in living conditions, for development of state farm operated industries, for the launching of economic diversification, and for the operation of integrated agricultural, industrial, and commercial enterprises. Another 30 percent was to be used for staff and worker welfare and awards, and 10 percent was to be used as a reserve fund for use in time of want.

In our use of assigned responsibility cash surpluses, we adhered to the principle of "deductions first and use later," whereby plans were submitted to departments in charge for examination and approval, and only after approval by public commerce and fiscal departments would arrangements be made for their use. This assured use of funds for important purposes surmounted blind action, and placed the focus of fund use on measures to convert losses into profits. From the province's grassroots level enterprise's assigned responsibility cash surpluses of 35 million yuan in 1980, plans were made to use 28.4 million during 1981 to change production conditions, to develop diversification, and to fund with 16.4 million yuan the founding of state farm operated industries and integrated agricultural, industrial, and commercial enterprises. This funding would represent 57.4 percent of the 28.4 million. For use on collective welfare and awards to staff and workers would be 7 million yuan or 25 percent; and a 500 [sic] yuan [should be 5 million] reserve fund would amount to 17.6 percent. At year's end a surplus of 6.8 million yuan would still remain.

We used assigned responsibility surpluses to set up revolving funds for state farm and land reclamation enterprises at the provincial, municipal, and county levels. Of a total of 27 million yuan for the province as a whole, circulating funds for state farm and land reclamation enterprises at the provincial level amounted to 16 million yuan. Use of these funds was in the hands of provincial state farm and land reclamation, and provincial finance departments. The funds were circulated for use through loans of funds, and signing of contracts involving loans, repayment to be made within a fixed period of time. Loan funds were used to develop farm operated industries, for economic diversification, and for operation of integrated agricultural, industrial, and commercial enterprises, for which purposes circulating funds for 109 individual items totaling 12 million yuan were issued to increase output value by 40 million yuan, giving vigorous support to development of state farm operated industries. In 1980, output value of industrial sideline occupations amounted to 160 million yuan, a 96 percent increase over 1976. Industrial sideline occupation output value as a percentage of total output value of agriculture rose from 20 percent in 1976 to 32 percent in 1980. In 1980, profits from industrial sideline occupations amounted to 24.5 million yuan, a 32 percent increase over 1976.

Accompanying the increase in assigned responsibility farm surpluses was a strengthening of fund management methods necessitated by withholdings from the previous year for use in the succeeding year. This quickened circulation of funds and moderated the situation of serious shortage of circulating capital for state farms.

2. Reform of Methods of Subsidizing Losing Farms, Changing the Make-up of Losses After the Fact To Support Before the Fact

The 72 state farms showing losses in Liaoning Province in 1976 were 68 percent of the total number of farms. Losing farms depended year after year on subsidies from public funds to exist, and there was no source of funds for them to change production conditions. We surveyed 6 continuous years of losses totaling 3.42 million yuan at the Shenyang Municipal Chicken Farm for the period 1974 to 1979, finding the principal causes of losses to be as follows: The farm was originally designed for the mechanized feeding of 300,000 chickens, but because chicken coop designs were irrational, the equipment did not suit them, and so egg production was scant for a long time. In order to solve these problems, the public fiscal departments changed after the fact subsidization of losses to before the fact allocation of funds for measures to correct the chicken coops. During both 1979 and 1980, a total of 1.62 million yuan was allocated to improve the structure of the chicken coops. Following improvement of the chicken coops, the egg production rate steadily climbed, the egg output rate for 1979 reaching 30 percent, and reaching better than 60 percent in 1980. In some storied buildings, during the bitterly cold winter the maximum egg production rate reached 80 percent. During 1980, an average of 66,000 chickens was raised (90,000 on hand at year's end), producing 1.21 million jin of eggs, which equalled the total egg output for the previous 6 years. In 1980, assigned responsibility losses were set at 600,000 yuan, but at year's end profits of 760,000 yuan were realized.

On the basis of its experience with the Shenyang Chicken Farm, in January 1981, the Provincial Government convened a work conference on converting losses to gains at which it put forward proposals for strengthening leadership teams at losing farms and for inventorying natural resource conditions to work out workable methods whereby, while working at planning to turn around losses, subsidization of losses after the fact could be changed to support before the fact. This meant transfer of funds intended to make up losses for losing farms for use in improving the conditions of production, for development of economic diversification, and for developing industrial sideline production.

The Xiaodong Breeding and Livestock Farm with an area totaling 330,000 mu is a breeding and livestock base for the breeding of hogs and fine-wool sheep in Liaoning Province, but because of windblown sand and drought, and low-lying areas prone to waterlogging, production conditions are poor, and great losses are incurred year after year. It is a great hardship unit of longstanding. We made a survey of this farm and figured out reasons for the losses, the prinpal ones being the saline-alkaline soil and low-lying land prone to waterlogging. We focused support for them on the building of farmland water conservancy projects and the planting of trees in a project of afforestation to increase their ability to resist calamity. Remarkable results have been obtained during the past 2 years, and this year a situation of no losses will be attained.

9432
CSO: 4007/111

BRIEFS

CHANGTU COUNTY GRAIN PRODUCTION--The masses in Changtu County, Liaoning Province, reaped a bumper harvest this year. Total grain output exceeded 1.85 billion jin of which 1.02 billion jin were delivered to state warehouses as commercial grain. The total grain output this year is 270 million jin more than that of 1980, increasing by 17 percent. [OW231213 Beijing Domestic Service in Mandarin 2230 GMT 15 Dec 81 OW]

CSO: 4007/139

NEI MONGGOL

PROGRESS OF AFFORESTATION IN ONE NEI MONGGOL COUNTY CHARTED

Beijing RENMIN RIBAO in Chinese 21 Oct 81 p 4

[Article: "Liangcheng County Afforests 400,000 Mu in 3 Years. Liberalization of Forestry Policies for Active Support to Afforestation"]

[Text] Liangcheng County in Nei Monggol, one of the country's advanced units in forestry, liberalized policies pertaining to the planing of trees for afforestation, afforesting 400,000 mu in 3 years, 80 percent of the preserve area afforested during the past more than 20 years.

During the 1950's, the county's careful attention to the planting of trees and the raising of livestock, and the emergence of some model communes and brigades, earned commendations from the Ministry of Forestry and various echelons of government. Later on, particularly during the period of the "Great Cultural Revolution," under influence of "leftist" ideology, neither natural laws nor economic laws were honored in a one-sided emphasis on "take grain as the key link." Much clearing of land was done with the destruction of pasturelands and forestlands, and this plus the confiscation of "privately held trees," in order to cut off the tail of capitalism, seriously dampened the tree planting enthusiasm of the masses. Survival rates for collective afforestation were very low, no trees being seen after repeated years of afforestation. As a result, the ecological balance was destroyed, and erosion was serious. By 1978, cultivated land throughout the county was 500,000 mu less than during the period immediately following Liberation; total grain output dropped 29.6 percent from the highest year, and more than 10 million jin of grain sold back to the county by the state was consumed. Livestock dropped by 30.7 percent from their highest levels, and average dressed weight of lambs purchased by the state fell from 20 to 9 jin.

Liangcheng paid severe natural penalties. Following the Third Plenary Session of the 11th Party Central Committee, the County CCP began to put forward throughout the county a slogan of "Put down roots for forests and grasslands, livestock and oil taking the land, grain to excess, and development of fisheries and sideline occupations." They mobilized more than 3,000 people with experience, technicians, and cadres, and began survey and study of the more than 5 million mu of mountains and water surfaces in the county, and adapted general methods to local situations in a major effort at afforestation.

By way of fully arousing the enthusiasm of the masses for planting trees and afforestation, Liangcheng County adopted a series of vigorous political measures as follows: In the case of barren mountains and slopes suitable for forests, afforestation of which the state lacked resources for the time being, joint afforestation was done by the state and communes jointly in a proportional division. Fairly good barren land suitable for afforestation that was located close to production teams and that could be afforested without great labor was parceled out to commune members for the planting of trees, flat sandy areas at a rate of 1 to 3 mu per household, and hilly regions at a rate of between 5 and 10 mu per household, no limit being placed on more. Staff, employees, and cadres in cities and towns were urged to plant trees at their organizations and dormitories, the saplings being provided by the state, but survival being the responsibility of individuals. On reaching maturity, the trees could be handled as the individuals saw fit. The overall program was active increase in state afforestation, the focus being on support to collective afforestation, and a liberalization to encourage individuals to plant trees, ownership rights going to those who did the planting, a certificate of forest rights being issued promptly. In this way, the enthusiasm of the state, the collective and individuals was aroused; rural villages, towns, and cities acted together; and an upsurge developed throughout the county in which the main orientation of attack was toward afforestation to break the wind and stabilize sand, prevention of erosion, and greening of the environment.

For the past 3 years, the pace of afforestation in Liangcheng County in a single year has been what it formerly had been in 6-1/2 years. Unified planning for the entire county; a combination of bushes, shrubs, and grasses; a combination of networks, tracts, and strips; a combination of botanical measures and engineering measures; and a combination of planting and closing areas to people to permit growth greatly accelerated the pace of greening. It increased the forested area of the county from 500,000 mu to 900,000 mu, and the forest cover rate climbed to 17 percent in a heartening step toward improving production conditions for agriculture and the livestock industry.

9432
CSO: 4007/103

NINGXIA

BRIEFS

TONGXIN COUNTY GRAIN--Yinchuan, 8 Dec (XINHUA)--Ningxia's Tongxin County produced 27 million jin of grains in 1975 when it suffered from drought. Although drought is more serious than in 1975, the county has already produced some 83 million jin of grains this year. [OW231213 Beijing XINHUA Domestic Service in Chinese 0052 GMT 8 Dec 81]

CSO: 4007/139

SHANDONG

RURAL VILLAGES CHIDED FOR OVERLY GENEROUS EARNINGS DISTRIBUTIONS

Jinan DAZHONG RIBAO in Chinese 29 Oct 81 p 1

[Article by Commentator: "Use Year End Distributions to Promote Development of Production--More on Doing a Good Job of Distributing Rural Benefits"]

[Text] In this year's work of distributing earnings in rural villages, all jurisdictions have given serious attention to increasing the level of commune member distributions, and this was the right thing to do. However, some units sought only to increase commune member distribution norms, and this was wrong. For example, no or insufficient production expense funds, accumulation funds, and public welfare funds were withheld; production funds were misapplied; prices of goods distributed to commune members were raised; and even items that should not properly have been included as collective earnings were arbitrarily made a part of collective distributions in the practice of deception. The reason for these problems occurring lay primarily an improper ideological understanding on the part of comrades whereby they confused production and distribution relationships, or lacked a spirit of seeking truth in facts. Some were unclear about demarcation lines, mixing together collective income and income from commune member household sideline occupations.

Increase in commune member income so that rural villages can become prosperous with all possible speed is the goal of our development of agricultural production. In the attainment of this goal, most fundamental is development of production. Only when a lot of material wealth is produced can commune member distributions rise as the overall situation improves. In order that production levels will increase year after year, however, in addition to the enthusiasm of workers ample production funds are also necessary to assure the purchase on time for use at the right time of superior varieties, of chemical fertilizer, of pesticides, and such goods required in production. Also necessary is accumulation funds for use in expanding further production, to carry out capital construction of agriculture, to build water conservancy, to buy farm machinery, to improve production conditions, increase capacity to combat natural disasters, and to increase the labor productivity rate. These production funds and accumulation funds have to be withheld from distributions. If one pays attention only to increasing distribution norms for any given year and distributes all income, for the year concerned distribution levels will have increased. However, if insufficient funds are retained to develop production, how can that help but impair development of production in the following year? If, in consequence, distribution levels are lowered, that will inevitably dampen the enthusiasm of commune members. Particularly deserving of attention is that Shandong

Province has had three consecutive years of drought, each year worse than the previous one. This autumn, an overwhelming majority of reservoirs are dry; rivers have ceased flowing; pump wells have no water; and the underground water table has dropped. This means very great difficulties for next year's production. For this reason, in handling the relationship this year between consumption and accumulation, it is necessary to proceed both from present welfare and to be concerned about the long term welfare, establish a psychology of long term combat against drought, fully estimate the difficulties that next year's agricultural production may encounter, and keep back sufficient production capital.

To do a good job of year end distributions, it is necessary to adhere to a work style of seeking truth in facts. Following the Third Plenary Session of the 11th Party Central Committee when everywhere throughout the province, CCP Central Committee prescribed programs and policies were earnestly carried out, production developed and distribution levels rose. In some areas and units, unexpected changes occurred with the emergency of numerous excelling production teams and excelling households. This played an active role in purging "leftist" influence, in eliminating peasant misapprehensions about becoming wealthy, in encouraging getting ahead, and in promoting production. Under this very good situation, we should proceed from the foundation of development of production and correct handling of the relationships among the three [the state, the collective and individuals] both to give attention to increasing commune members' incomes and to resolutely oppose killing the chicken to get the eggs, or even not to seek truth in facts and resort to deception. Several years ago, in order to "exceed the targets set in the National Agricultural Development Program" or "exceed the target set for the region located between the Huanghe and the Changjiang" understated the number of mu planted, increased per unit yields, or did not calculate costs, caring nothing for results, or even falsifying output. This resulted in harm to the peasants and damage to the party's style, lessons that must be conscientiously absorbed in unswervingly carrying forward the party's glorious tradition of seeking truth in facts. In distributions, there must be resolute verification of outputs and earnings, a proper handling of relationships among the three [the state, the collective and individuals], and earnest following of the mass line. With respect to distribution norms handed down from above, if the lower level fills out reports of distributions as the leaders require, sends forward to superiors reports from the grassroots that do not suit the leaders, to force the lower levels to revise such reports is wrong. Naturally one must also be alert to the existence among grassroots cadres and the masses of misgivings about party policies, fears of being revealed as prosperous, and fears that additional requisition procurement quotas will be levied that might militate against reporting true output. Some cadres don't want to be bothered, so they treat the contracted production figures as actual production figures, so reporting them. In other cases, those not familiar with the work are unable to distinguish boundaries and mistakenly report or omit data from reports. Leaders at all levels should do a good job of political and ideological work, thoroughgoingly propagandize the party's policies, dispel the masses' apprehensions, increase cadre management levels, and make every effort to do a good job of this year's earnings distribution work so that distributions play a better role in promoting development of production.

9432
CSO: 4007/95

SHANDONG

MEASURES FOR PLANTING WHEAT IN DROUGHT CONDITIONS DESCRIBED

Jinan DAZHONG RIBAO in Chinese 28 Oct 81 p 1

[Article: "Wheat Sowing Substantially Completed in Shandong Province. With the Spirit of the Foolish Old Man Who Removed the Mountain, Every Possible Means Used to Triumph Over Serious Drought; All Areas Currently Giving Strenuous Attention to Launching a Campaign to Resist Drought and Protect Seedlings To Get a Full Stand of Flourishing Seedlings"]

[Text] The broad masses of rural cadres and masses in Shandong Province have carried forward the spirit of the foolish old man who removed a mountain, using every manner of means to eliminate countless difficulties and triumph over drought in fall planting. As of the present time, wheat has been sown on 50 million mu, or 96 percent of the planned area. Currently a campaign to resist drought and protect seedlings has been actively launched everywhere in an effort to get a full stand of flourishing seedlings.

This year, autumn planting in Shandong Province has encountered serious autumn drought. Since the beginning of September, rainfall throughout the province has averaged only 20 millimeters, which is less than 80 percent that of ordinary years. Because of the seriousness of the drought and its long duration, in most areas the difficulty in planting wheat is such as has rarely occurred. CCP committees and government at all levels have made resistance to drought for autumn planting the central task in rural villages. They have organized large numbers of cadres to go into the front line of resistance to drought under the leadership of comrades in charge, to investigate and study, to summarize experiences, and to do a solid job of helping solve real problems in fighting drought. The Provincial CCP Committee and the Provincial Government have twice convened urgent telephone conferences on resisting the drought, and they have sent eight secretaries and deputy provincial governors at the head of work teams to prefectures and counties where the drought is serious and hardships great to help give guidance. A total of 77,000 cadres from prefectures, counties, and communes throughout the province are active on the front line of the fight against drought, sharing weal and woe with commune members, and fighting shoulder to shoulder with them.

In the fight against drought, all jurisdictions have made the establishment and perfection of a system of responsibility for wheat production a key measures in autumn planting. More than 90 percent of the province's basic accounting units have implemented systems of responsibility for wheat production. More than 80 percent of them have instituted uniformly administered systems of responsibility that link output to the workforce, and contract production or responsibility for major jobs with individual households. There is general unified planning, unified planting, unified irrigation, and unified use of farm machinery, which both makes the most of the advantages of the collective economy and fully arouses the enthusiasm of individual commune members to promote the fight against drought and autumn planting work.

In their fight against drought to plant wheat, the broad masses of cadres and commune members do not rely on the heavens and do not wait for rain, but rather use the time and take the initiative to wage war night and day, carrying on a stubborn struggle unremittingly against the drought. According to statistics, throughout the province more than 20 million people comprise the workforce that is fighting drought, and more than 320,000 pieces of machinery to raise water have been put to use. In addition to making full use of various existing water conservancy facilities and sources, more than 5,000 new pump wells have been sunk, and 33,000 dug wells or hand-pump wells have been put into operation. Additionally, some spray irrigation has been developed. In total, almost 5 billion cubic meters of surface or underground water has either been diverted or raised to moisten, and to keep irrigated following seeding, an area amounting to more than 40 million mu. In some places with a dire shortage of water resources, vehicles have been actively organized to haul water as have people to carry it on their shoulders or on poles, males and females, the old and the young all joining in to hasten the pace of wheat sowing.

All trades, industries, and departments have made striking achievements in vigorous support to the fight against drought for autumn sowing. Industrial, finance and trade, and railroad transportation departments have actively collected funds to take the initiative in doing allocation, shipment, and supply work involving materials to fight drought. People's Liberation Army units stationed in the province have made very great contributions in manpower and materials to support communes and brigades fight drought to do autumn planting.

Right now all areas are concerned with the poor soil moisture for this year's autumn planting and the large late crop of wheat. In some units, the wheat area is insufficient, and problems exist in some wheatfields where seedling growth is uneven, wheat seedlings are spindly and weak, and gaps among seedlings or cracking of the soil around seedlings is fairly serious. They are giving strict attention to checking seedlings and adding to them, watering and top dressings of fertilizer, hoeing to loosen the soil, and such field care, to lay an excellent foundation for winning a bumper wheat harvest next year.

9432
CSO: 40007/95

BRIEFS

FLUE-CURED TOBACCO, FRUIT HARVEST--This year Shandong Province's total output of flue-cured tobacco has broken the 4 million dan mark, an increase in output over last year of more than 900,000 dan, the highest annual record ever. As of 20 October, quantity procured throughout the province was 3.74 million dan, overfulfilling the procurement plan for the entire year in an increase over last year of almost 30 percent. The grade specification rate was also higher than last year's. Yellow tobacco leaf from Shandong Province is fairly thick and oily. The tobacco flavor is mellow and mild and forms the main blend in China's cigarettes. As a result of this year's institution of a system of responsibility whereby calculation of remuneration was linked to production, in a drought year the tobacco farmers fought drought to transplant their crop, checked seedlings to fill in any that were missing, and assured a full stand of flourishing seedlings. This year total output of various kinds of fruits in Shandong Province will reach 3.4 billion jin, a 400 million jin increase over last year. This year has seen an increase output of traditional furits including Yantai apples, Laiyang pears. Feicheng large peaches, Qingzhou honey peaches, Leling gold streaked small dates, Dazeshan grapes, Yantai large cherries, and Zaozhuang pomegranates. [Text] [Jin DAZHONG RIBAO in Chinese 30 Oct 81 p 1] 9432

CSO: 4007/95

GREATER DEVELOPMENT OF FOOD INDUSTRY URGED

Taiyuan SHANXI RIBAO in Chinese 17 Oct 81 p 1

[Commentary: "The Foodstuffs Industry Must Develop in a Big Way"]

[Text] To adapt to the needs of building the four modernizations, in the readjustment of the national economy, the foodstuffs industry should have a greater development. Our province at present must first hasten the development of candy, beer, confectionery, bread, drinks and various seasonings by our foodstuff industry. Our province must especially develop convenience foods, baby foods, nutritious and medicinal foods, and traditionally famous foods with local characteristics which are all needed by the people in the towns and villages. The foodstuffs industry enterprises operated by the light industry, and the food grains and commercial departments must be uniformly planned and cared for; they should cooperate closely to assure quality and to increase the varieties of products and elevate our province's foodstuffs industry to a new level. Some units that still hold to the idea of "quick preparation of carrots without bothering to clean off the mud" and engage in careless production, providing incomplete products and cheating the customers must be overcome. Each concerned department must further strengthen the leadership of the foodstuffs industry, and on the basis of surveys and research and understanding the situation, take effective measures to help the foodstuffs industry enterprises solve some actual problems urgently requiring a solution and truly implement the task of hastening the development of the foodstuffs industry so that it will move ahead with quickened steps, further improve the market supply and satisfy the daily needs of the people.

9296
CSO: 4007/89

DEVELOPMENT OF FOOD PROCESSING INDUSTRY EMPHASIZED

Taiyuan SHANXI RIBAO in Chinese 17 Oct 81 p 1

[Article by Du Jucai [2629 1565 2088]: "The State Allocates 85 Million Jin of Grains for Food to Our Province"]

[Text] The state has allocated to our province's foodstuffs industry an additional amount of food grains totaling over 85 million jin. This has been alloted by concerned departments of the provincial government as follows: 74 million jin to the department of commerce; 11 million jin to the foodstuffs department; and 500,000 jin to the light industry department. In addition, with the approval of the Ministry of Food, our province has also given the provincial supply and marketing cooperatives system an additional amount of 16 million jin of grains for confectionary (white flour).

The amount of additional food grains was alloted on a priority basis for the production of foodstuffs for the New Year and spring holiday festivities and for the key products of candy, confectionery, small foodstuffs, seasonings, beer, [illegible], lump noodles, and bean products, which are foods urgently needed on the [illegible] and grains needed for cooked foods used by the urban food service industries. According to preliminary estimates of the four departments of commerce, food grains, supply and marketing and light industry, this amount of food grains can increase the production value by 22.03 million yuan, and earn cash of 26.33 million yuan and increase tax revenues by 3.7 million yuan.

The supplementary food materials such as the added food grains and oil and sugar for processed foods allocated for the foodstuffs industry of each locality and city are all being supplied proportionally by the local food grains and commercial departments. Some foodstuffs have been produced and marketed.

9296
CSO: 4007/89

BAODE COUNTY ACHIEVES BUMPER HARVEST OF FOOD GRAINS

Taiyuan SHANXI RIBAO in Chinese 27 Oct 81 p 1

[Article by Yang Yaozhong [2799 5069 1813]: "The Policy and the Guideline Are Right; a Poor County Has Hope of Turning the Situation Around; Baode Realizes Big Bumper Harvest of Food Grains This Year; Many Farm Families Producing '10,000 Jin of Broomcorn Millet' and '1,000 Jin of Beans' Have Emerged Throughout the County"]

[Text] Baode County, which has always been known as poor and backward, implemented the production responsibility system this year, fully mobilized the enthusiasm of the farmers, and realized a big bumper harvest of food grains in a year of severe drought such as has been rarely seen; it is hoped that the total yield will surpass that of 1978, the best year in history. Of the yield, miscellaneous grains will constitute 85 percent.

Since last winter, the Baode County committee dispatched work teams to go deep into the farm villages three times to help establish a sound production responsibility system. Last winter there was no snow and this spring there was no soaking rain. The broad number of farmers arranged for autonomy in production, and planted rationally according to the situation of drought, expanded the planting area of miscellaneous small grians such as broomcorn millet, panicum miliaceum, mung beans, cowpeas, and soybeans, all of which conserve moisture, are tolerant to drought and have a short growth period.

Now, the autumn harvest and autumn threshing are about to end. According to surveys by concerned departments, this year the degree of aridity in Baode surpassed that in 1978, when the weather was good; it is hoped that the yield will show an increase of nearly five times over that of 1972. The yield of miscellaneous small grains--mainly broomcorn millet, cowpeas and mung beans--will reach over 47 million jin, surpassing any other year in history. Many farm families producing "10,000 jin of broomcorn millet" and "1,000 jin of beans" have emerged throughout the county. Every family is weaving straw bins, buying large urns and storing more grains. The commune members say happily: "Without the present good policies, there would not be such good ahrvests."

9296
CSO: 4007/89

FINE SUGARBEET HARVESTS FOLLOW PURGING OF LEFTIST ERRORS

Taiyuan SHANXI RIBAO in Chinese 21 Oct 81 p 1

[Article: "Purge the Influence of Leftist Mistakes and Implement the Party's Policies on an Overall Basis; This Year, Yanbei Prefecture Again Has Realized a Bumper Harvest on Sugarbeets; Total Yield to Surpass 100,000 Tons"]

[Text] Yanbei Prefecture, which has had increased yields of sugarbeets continuously for 3 years, once again has realized a big bumper harvest this year. The whole prefecture has sown over 110,000 mu of sugarbeets, and the total yield can reach over 100,000 tons--an increase of over 60 percent over last year.

A basic reason for the bumper harvest of sugarbeets in Yanbei Prefecture was that the prefecture has conscientiously purged the influence of leftist mistakes, thoroughly implemented the policy concerning sugarbeet production, and mobilized the enthusiasm of the broad ranks of commune members. After the Third Plenum of the 11th Party Central Committee, Yanbei Prefecture implemented the method of awards for turning in and selling sugarbeets to the prefecture by the production teams. For every 200 tons submitted and sold to the authorities, the subsidy is 3 yuan per ton; for every 400 tons turned in and sold, it is 5 yuan per ton; and for every 1,000 tons turned in and sold, it is 10 yuan plus 3 yuan for the coast of the seeds per ton. The regulations also call for the return of 1 jin of food grains for every 10 jin of sugarbeets turned in and sold, and for the return of 10 jin of sugar for every ton of sugarbeets turned in and sold. Thirty percent of the sugarbeet fibers are returned without compensation. In counties that are in joint operation with the sugar refineries, the price for each ton of sugarbeets produced by the production teams is not less than 86 yuan. The profit from sugar manufacturing from sugarbeets is split in "4-4-2" shares: 40 percent submitted to the state, 40 percent returned to the production teams, and 20 percent retained by the enterprise. A policy of 1 jin of sugar for every jin of food grains also was implemented--i.e., for brigades with food-grain ration of less than 500 jin, turning in and selling 8 jin of sugarbeets earns a return of 1 jin of food grains. For brigades with a food-grain ration of over 500 jin, no food grains are given in return. Within the production teams, the situation of "eating from the big pot" was changed and various forms of the production responsibility system were implemented.

The sugarbeet-producing regions in Yanbei are concentrated, the harvest is large, at the end of September each county had conscientiously grasped the preparatory work for harvesting, transportation, and procurement. At Jingbao and Beitongpu and along the highways, 15 additional sugarbeet-procurement stations were established. The method of pre-orders for submitting and selling at fixed localities and for fixed quantities was implemented in commune brigades with large yields, and convenience was provided for the masses.

9296
CSO: 4007/85

WANRONG COUNTY MULCHES FIELDS, RAISES COTTON OUTPUT

Taiyuan SHANXI RIBAO in Chinese 16 Oct 81 p 1

[Article by Li Zhengsuo [2621 2973 6956]: "Wanrong County Popularizes New Mulching Technique Using Thin Plastic Sheets To Cover Cotton Fields in a Big Way; 6,500 Mu of Cotton Fields Have Produced Visible Increases in Yield"]

[Text] Wanrong County, which has had nine droughts in 10 years, recently had encouraging news: on 6,500 mu of cotton fields which were mulched with thin plastic sheets, estimates show that the minimum per mu yield can reach 80 jin of ginned cotton and the highest per mu yield can reach about 200 jin, an increase of 30 to 150 jin of ginned cotton per mu over cotton fields not mulched.

How to solve the problems of the difficulty in producing good seedlings during the cotton sowing season because of the lack of rain, the lack of growth of the seedlings during the early growth period because of low temperatures, and the premature falling of the cotton bolls during the middle growth period because of drought were key problems that had not been solved for a long time in cotton production in the loess plateau regions and in Wanrong County. In 1979, with the help of the provincial Cotton Science Institute, the Wanrong County Agricultural Bureau established five test localities throughout the county and planted 2 mu of cotton fields mulched with thin plastic sheets. The experimental results showed that the covered cotton fields produced 57 jin more of ginned cotton per mu than cotton fields not covered. In 1980, the county expanded the cotton fields mulched with plastic sheets of 30 areas totaling 60 mu. Experimental results showed the covered fields produced an average increase of 59.7 jin of ginned cotton per mu over uncovered fields. The broad number of cadres and masses saw with their own eyes in the experimental fields that the new technique of mulching cotton with plastic sheets had a visible effect on increasing yield. Everyone asked that the technique be popularized over large areas.

The Wanrong County committee of the Chinese Communist Party treasured the enthusiasm of the broad masses for planting cotton scientifically. On the one hand, it conducted training classes in the technique of mulching with plastic sheets in a big way and trained over 5,400 people as the technical backbone. On the other hand, it actively organized the various departments of finance and commerce, industry and communications and supply and marketing to support the masses in financing, materials and transportation to popularize the new technique of mulching with plastic sheets. The enthusiasm of the broad number of commune members and masses for popularizing the technique of mulching with plastic sheets was very high. Many commune members took the initiative in bringing out their money saved for purchasing the "four major possessions" of building a house or purchasing a bicycle to buy thin plastic sheets.

Wanrong County summarized the following advantages of mulching the ground surface of cotton fields with plastic sheets after 3 years of experience: First, mulching can maintain temperature, increase temperature and produce early seedlings. Based on 3 years of experiments, the ground temperature of cotton fields mulched with plastic sheets is higher by an average of 2 to 3 degrees than cotton fields not covered, thus solving the problem of the lack of seedling growth during the early period because of low temperatures. Second, mulching can preserve moisture, prevent drought and produce full seedlings. Using the mulching technique of covering the ground surface with plastic sheets prevented the evaporation of ground surface moisture, retained the moisture in the soil, and increased the water content of the tilling layer of the soil, all of which was favorable to the emergency of cotton seedlings. Third, it caused the growth period of cotton to occur earlier, which enabled the handling of presummer bolls, summer bolls and autumn bolls well. Covered cotton plants produce an average of 3.7 more presummer bolls per plant, 1.6 more summer bolls per plant, 1.5 more autumn bolls, or a total of 6.7 more bolls per plant than uncovered cotton plants. Mulching with plastic sheets also helps to control weeds, reduce consumption of nutrients, prevent the soil from becoming hardpan, and is favorable to the growth and development of the root system. Former party committee secretary Li Qing [2621 1987] of the Cotton Institute of the Chinese Academy of Agricultural Sciences went to Wanrong to visit and later said to reporters: The new technique of mulching cotton fields with thin plastic sheets is a very effective measure to increase yield and is worth propagandizing and popularizing in a big way.

9296
CSO: 4007/89

EXPERIMENT IN HASTENING FORESTRY DEVELOPMENT SUCCESSFUL

Taiyuan SHANXI RIBAO in Chinese 15 Oct 81 p 2

[Article by Yin Lingchu [3009 0109 0443]: "This Year the Whole Province Has Planted Fast Growing Forests on Nearly 70,000 Mu and Has Gradually Developed Toward Concentrated Large Area Expanses"]

[Text] A new way to hasten the development of forestry--the establishment of fast-growing bumper harvest forests--has undergone new progress in our province. Since the beginning of this year, the whole province has planted over 69,000 mu of fast-growing bumper harvest forests mainly of poplar, constituting 4.4 percent of the area of forestation this year throughout the province.

Since the beginning of spring this year, each locality in our province has liberated thinking and suited measures to local circumstances in the course of readjusting the strucutre of agricultural production and placed the key measures of forestry establishment in the agricultural regions, implemented forestation techniques of using large pits, large saplings, large distances between rows of trees and appropriately deep planting. On the basis of establishing the production responsibility system, intensive management was carried out to hasten the development of fast-growing bumper harvest forests. Most regions carried out planting trees like planting fields, managed trees like managing cotton, and established a foundation for solving the extreme lack of wood in agricultural regions. Many counties changed the method of singular management in developing fast-growing bumper harvest forests, implemented interplanting of forests and food grains, and achieved visible results. Huairen County, which used to be a windy place, forested over 4,000 mu of fast-growing and bumper harvest forests during the past 2 years. In 1978, the Shangxizhuang Brigade planted 280,000 trees as a network. Each year, the trees were irrigated five or six times. Each tree was fertilized through the application of 2 to 5 liang of chemical fertilizers, the annual growth of the tree trunk diameter was 3 centimeters, and now they have become rafters.

A visible characteristic of the establishment of fast-growing bumper harvest forests this year throughout the province is that on the basis of small areas of forests of the past, forestation has gradually developed toward concentrated large areas of continuous expanses. This year, throughout the province there are 15 counties that have forested bumper harvest forests covering over 2,000 mu, 15 counties that have forested over 1,000 mu, 25 counties that have forested over 300 mu, and the tree varieties that are suited for growing in the localities have been selected and introduced.

9296
CSO: 4007/89

BRIEFS

INCREASED CONVENIENCE FOODS--In recent years, the entire province's large and small food grains and oil-processing enterprises have gradually developed. The amount of convenience foods provided for the market has continued to increase. Since 1979, 22 noodle shops have been newly built or expanded throughout the province and the total yield of noodles has reached over 36 million jin. The Taiyuan Noodle Plant expanded its noodle shop, and its annual production capability has increased from 9.6 million jin to 15.6 million jin; it mainly produces three products: refined noodles, standard noodles, and egg noodles. Recently, it also successfully test-produced convenience noodles. The Taiyuan City Food Grains Bureau has newly built a bread factory that produces 2 million jin a year. Since production began last April, it has produced 3 million jin of fine bread, standard flour sweet and salty bread. In addition, the food grains department of each locality has processed over 270,000 tons of food grains and oil for farm village commune members in the past 2 years. The production and profit plans of the food grains and oil industries of the whole province have been completed and surpassed every year. [Text] [Taiyuan SHANXI RIBAO in Chinese 17 Oct 81 p 1] 9296

DEVELOPMENT OF FOOD INDUSTRY--Since the beginning of this year, our province's foodstuff industry of the light industry system has developed greatly. According to statistics, from January to September, the production of sugar increased nearly six times over the same period last year, drinks and wines increased 11 percent, dairy products increased 32.5 percent, and fruit candies increased 24 percent. The production of various canned fruits, alcohol, chemical seasonings, aged vinegar, drinks, starch, liquid glucose and small foodstuffs also increased in varying degrees. To meet the need for some foodstuffs that are in extremely short supply on the market, each foodstuffs industry enterprise exerted efforts to dig for potential, increased production, and actively test produced new products. According to preliminary statistics, since the beginning of this year, 78 varieties of new products have been successfully developed, mainly hawthorn jelly drinks, special beer, various carbonated wines, carbonated sodas, low alcohol white wines, various types of fruit wines that have a definite medicinal function, malt extract liquor, sour milk, malt and milk extract, powdered milk for babies, walnut cakes, and various canned foods. Most of them are already being produced and supplied to the market. [Text] [Taiyuan SHANXI RIBAO in Chinese 17 Oct 81 p 1] 9296

CSO: 4007/89

RECORD LATE RICE YIELD ACHIEVED IN YIBIN PREFECTURE

Chengdu SICHUAN RIBAO in Chinese 1 Nov 81 p 1

[Article: "Late Rice Yield in Yibin Prefecture Increases 50 Percent; Total Yield of the Whole Prefecture's 843,000 Mu of Late Rice Increases 50 Percent Over Last Year; Unit Yield Increases Over 20 Percent"]

[Text] Following the bumper harvests of early and intermediate rice in Yibin Prefecture, late rice again realized a large-scale increase in yield. The total yield of the 843,000 mu of late rice throughout the whole prefecture increased 50 percent over last year, and the yield per unit increased by over 20 percent. This is the year with the highest yield of late rice.

The counties and cities along the two banks of the Changjiang in Yibin Prefecture have had many years of experience in planting double-season rice. This year, because various forms of the agricultural production responsibility system were further implemented, the enthusiasm of the rural masses to suit measures to local circumstances and plant more late rice and plant late rice well was greatly mobilized. The area transplanted in late rice throughout the prefecture increased by more than 150,000 mu from last year. During the course of production of late rice, each locality popularized superior hybrid varieties and implemented seedling cultivation using wheat husks, fertilizer, and irrigation, leaving seedlings in selected rows in the seedbeds, and using the untilling method and similar high-yield cultivation techniques. Luzhou County, which mainly produces double-season rice, planted 480,000 mu in late rice this year; the average yield per mu was 380 jin. Of this area, 200,000 mu were in hybrid late rice; the average yield per mu reached 500 jin, with highs reaching over 700 jin.

9296
CSO: 4007/97

DIANJIANG COUNTY PADDY RICE PRODUCTION REACHES HIGHEST LEVEL

Chengdu SICHUAN RIBAO in Chinese 4 Oct 81 p 1

["Dianjiang County Paddy Rice Production Creates Highest Level in History"]

[Excerpts] Dianjiang County has respected the wishes of the masses, implemented various forms of the responsibility system, and mobilized the enthusiasm of the peasant masses so that over 400,000 mu of paddy rice throughout the county have realized a big bumber harvest as never seen before. Total output has increased 24 percent over last year with a net average per mu increase of 143 jin. This ended the situation of stagnant paddy rice yields for over 20 years and created the highest level in history.

Dianjiang County is situated on low hills. The natural conditions are good. The whole county has a total of 680,000 mu of cultivated land of which rice fields constitute 440,000 mu. Paddy rice occupies an important place in grain production. In the autumn of 1980, the whole county popularly implemented the method of "unified management of paddy rice and contracting dryland crop production" while establishing the production responsibility system. The enthusiasm of the commune members to produce dryland grain crops well is much higher, but a new conflict of competing for labor force, competing for fertilizers, and competing for the seasons has emerged between paddy rice and dryland crops. People planted the drylands and applied fertilizers to it while paddy rice production was neglected. This spring, the county committee and the county government linked the study of the speech by leading comrades of the Central Committee on the question concerning the agricultural production responsibility system and the provincial committee documents concerned with the actual situation of the county. They conscientiously discussed the problem of how to further increase agricultural production. Everyone analyzed the history and the present situation of agricultural production throughout the county; summarized the experience and lessons; and clearly saw that, to increase paddy rice production, a responsibility system that is more directly connected to the benefits of the producers must be implemented. This would overcome the shortcoming of eating from a second pot and fully mobilize the enthusiasm of the masses. For this, the county committee and the county government made immediate decisions based on the demands of the broad masses, actively implemented changing paddy rice production from "unified production" to "contract production". They treated dryland crops in a similar manner. They implemented a responsibility system in which output quotas were assigned to individual able-bodied laborers and production was contracted to the households. This has been enthusiastically welcomed by the farmers. Throughout the county, 98 percent of the production teams quickly implemented this responsibility system during the 2-week period before the busy spring plowing season. On this basis, the party committee at each level conscientiously strengthened leadership; grasped ideological education well; established management methods; actively guided the masses to correctly understand the problems of competing for draft cattle, irrigation, and farm tools; and ensured that the superiority of this responsibility system is developed well. Thus, the smooth progress of agricultural production was promoted.

As the responsibility systems of assigning output quotas to individual able-bodied laborers and contracting production to the households in paddy rice production were perfected, the masses of commune members produced paddy rice well with enthusiasm never seen before. This year, the area of superior varieties of paddy rice throughout the county reached 98 percent. Expanses of seedlings and seedlings with many tillers and that are healthy have been popularly cultivated. Timely transplanting and rationally dense planting have been realized. At the same time, application of fertilizers has been rational, management has been fine, diseases and insects have been prevented and controlled in time, and the level of scientific planting has been greatly elevated. The total output of paddy rice for the whole county reached 300 million jin. Every commune and every brigade produced large increases in yield with a large number of high yielding models producing over 1,000 jin of paddy rice per mu. Peasant households with 10,000 jin of rice and with a per capita of 1,000 jin of grain have emerged. The number of households with a per capita average of over 1,000 jin of rice in the Xinmin area reached over 1700. At present, the commune members are happy; they have summarized experience, selected and saved superior seeds, and actively prepared fertilizers, thus laying a good foundation for realizing a greater bumber harvest of paddy rice next year.

9296
CSO: 4007/69

WUSHENG COUNTY BARLEY, WHEAT SOWING EXPANDED

Chengdu SICHUAN RIBAO in Chinese, 6 Oct 81 p 2

[Article by Wu Zheng [2976 2398]: "Strengthen Leadership, Implement Measures, Wusheng County Basically Completes Plan to Expand Winter Dryland Fields, the Area of Fields Newly Improved by Digging Ditches and Draining Water Has Reached 94 Percent of the Plan"]

[Text] Wusheng County has taken forceful measures, suiting these measures to local circumstances to expand the area of winter dryland fields. The area of fields newly improved by digging ditches and draining water has reached 94 percent of the plan. The plan for the winter crop of 1981 in Wusheng County calls for the planting of 180,000 mu, an increase of more than 17,000 mu over the previous year. The added area of winter crop mainly relies on expanding the double-cropped fields. Since the beginning of autumn, there has been more rain, and this has brought difficulty to the work of improving the fields. At the end of August, there was still 13 percent of the area planned for change that had not been implemented throughout the county. The actually ditched and drained area constituted only 64 percent of the planned area. In many places, winter water flow has been shut off. The reason for shutting off the winter water flow is that, in some places, the responsibility system has not been implemented and commune members are indecisive. Because of comparatively more rain, some people are ideologically afraid. Some fear that there will be a lack of water for preparing the dryland fields next spring and that there will be problems in transplanting the seedlings.

Faced with this situation, the county committee and the county government analyzed the situation and believed, as water conservancy facilities are improved and the experience of improving the fields over the years accumulates, the conditions for expanding double-cropped fields are ripe. The key is to grasp the work in detail and solidly. Each commune and brigade immediately took three measures based on improving and perfecting the responsibility system: 1. For planned new dryland fields, if the contracting commune members are not willing to drain the water and improve the fields, the production team can give the contract to other commune members who are willing to do so. 2. In the new dryland fields which have poor drainage ditches and secondary ditches not up to standard should be rebuilt by mobilizing contractors. The production teams also can organize manpower to rebuild and dig ditches. The work points are to be paid by the contractors. 3. The newly improved double-cropped fields contracted by families with a weak labor force can be ditched and drained by exchanging laborers for mutual assistance borrowing laborers and returning them or the production teams can arrange for laborers to do the work.

After implementing these three measures, the work of expanding the double-cropped fields produced welcomed results. Now the area of fields improved by ditching and drainage has reached 94 percent of the planned area. The area of plowed fields constitutes 14 percent of the fields ditched and drained. The present weather is clearing. The communes and brigades are making use of the time to plow the soil and prepare for planting.

9296
CSO: 4007/69

DAYI COUNTY RAPE, WHEAT CULTIVATION TECHNIQUES BROADCAST

Chengdu SICHUAN RIBAO in Chinese 3 Oct 81 p 2

[Article by Luo Wenbo [5012 2429 3258], Mo Yuanhui [5459 6678 6540], Bai Xiaotian [4101 2556 1131]: "Dayi County Conducts Radio Lectures on Techniques for Cultivation of High Yields of Rape and Wheat"]

[Text] The Dayi County Government Agricultural Office and the Dayi County Broadcasting Bureau began on 12 September special topic radio lectures on techniques for cultivating high yielding rape and wheat and popularization of agricultural science knowledge.

Since the beginning of this year, the development of the production responsibility system in the form of assigning output quotas to individual able-bodied laborers as implemented by the production teams in Dayi County has been rapid. Crops sown in the spring involve over 50 percent of the total number of production teams while crops sown in the late autumn involve over 80 percent of the total number of production teams. The broad masses of commune members urgently asked to learn about agricultural science. Therefore, the county agricultural office and the county broadcasting bureau negotiated and decided to conduct a radio lecture on the eve of autumn sowing. They invited the agro-technicians and assistant agro-technicians of the county agricultural bureau to systematically lecture on the techniques and measures for cultivating high yielding rape and wheat in accordance with the growth characteristics of the superior varieties popularized in the county. They had the agro-technicians discuss the soil and climatic characteristics of the county. The county broadcasting bureau held a special meeting of commune broadcasters, asking each commune broadcasting station to conscientiously do the work of maintaining the radio lines well and to relay the broadcasts on time so that the commune members could listen to the broadcasts.

9296
CSO: 4007/69

PENG COUNTY WHEAT GERMINATION EXPERIMENT CONDUCTED

Chengdu SICHUAN RIBAO in Chinese 3 Oct 81 p 2

[Article: "Peng County Grasps Wheat Germination Experiment Tightly to Ensure the Quality of Wheat Sowing"]

[Text] Peng County organized forces to conduct a germination test of over 7 million jin of wheat seeds stored by the county. The test was to provide a reference for accurately determining the sowing amount by the communes and brigades and ensuring the quality of wheat sowing. Thus, the communes and brigades could strive for a bumper harvest of next year's spring-harvested crop.

This year, Peng County seems to have a sufficient inventory of wheat seeds at present. But, in quality, because of more rain during this year's summer harvest, the wheat seeds have been greatly affected. Some brigades suffered from floods. Some wheat seeds have germinated, some heated, turned moldy, grew "niu" [3662], affecting the germination rate to varying degrees. The food grains department has determined that only 63 percent of the 1,090,000 jin of wheat seeds have a germination rate of over 80 percent. The county seed company organized agricultural technicians in over 20 communes to carry out sampling. They determined that the germinating rate of the wheat seeds of over 300 production teams was only 70 percent to 80 percent, and that of individual teams was even less than 40 percent.

9296
CSO: 4007/69

BUMPER CROPS IN NEIJIANG PREFECTURE DESPITE FLOODS

Chengdu SICHUAN RIBAO in Chinese 5 Nov 81 p 1

[Article: "Develop the Power of Policy and Defeat Extremely Severe Floods; Neijiang Prefecture Realizes Bumper Harvests of Food-Grain Crops and Diversified Economic Crops"]

[Text] The people of Neijiang Prefecture defeated the extremely severe floods, the likes of which had not been encountered in 100 years, and on the basis of 4 continuous years of bumper harvests of food grains and diversified economic crops it again realized a good harvest this year. According to figures provided by the Bureau of Statistics of the prefecture, the total yield of food grains increased slightly over last year; cotton and rapeseed increased by almost 20 percent; and jute increased 9.5 percent. Procurement of food grains throughout the prefecture has fulfilled the annual plan, with a surplus of 2 percent. The prices of food grains in the farm goods markets throughout the prefecture have dropped while remaining steady from last year. The amount of various eggs and the varieties of domesticated fowl have increased, and supplies are abundant.

Of the eight counties and one city in this prefecture, five counties and the city suffered from floods on two occasions. But in many counties and the city where there was severe flooding, the yield did not drop but increased. For example, over 300,000 mu of farm crops in Zizhong County suffered from the disaster. The county party committee immediately relaxed its policy in line with the situation, the communes and brigades readjusted the goals for the quotas, contracts, and awards of the responsible fields, and in the year of great disaster, paddy rice, pink vetch, sugarcane, peanuts, and rapeseed all realized increased yields, and the yield of food grains increased 3.4 percent over last year. The more than 430,000 mu of cotton in Jianyang County suffered from drought during the early period and autumn waterlogging during the latter period, and during the middle period over 70,000 mu were damaged by floods. Because the production responsibility system of linking production to the worker was established and because key measures were implemented, the unit yield of cotton increased, the total yield increased by 20.9 percent over last year, and the average increase per mu was over 10 percent. Up to the present time, the financial income of Ziyang County, whose county seat was flooded, showed a 14.4-percent increase over last year, making it the county with the greatest financial income in the whole prefecture. Total industrial production value up to the end of September was 62.9 percent of the annual plan. The amount of agricultural and sideline products procured increased 9.4 percent. The task of food-grain procurement is basically complete. Although 23,000 mu of the 80,000 mu of flue-cured tobacco fields were damaged, remedial measures were carried out in time, and as a result the unit yield increased and the total yield still approached last year's level. At present, over 90 percent has been procured.

The increased yield in the counties that were only slightly affected or were not affected by disasters throughout the prefecture is even more encouraging. The well-known poor county of Longchang [in Yibin Prefecture] used to consume 5 million to 10 million jin of returned food grains from the state each year. Since last winter, the county has implemented the production responsibility system, greatly mobilizing the enthusiasm of the masses. This year, the total yield of the community reached over 430 million jin, an increase of 18.1 percent over last year. The average food-grain ration per capita reached 600 jin, the whole county sold a surplus of more than 4 million jin to the state, and it supported disaster regions with over 400,000 jin. Peanuts increased 15.2 percent and rapeseed increased 123.6 percent, making [Longchang] the county with the greatest increase in food-grain production in the entire prefecture.

9296
CSO: 4007/97

MIANYANG PREFECTURE OVERCOMES SOIL, SOIL FERTILITY DAMAGE BY FLOOD

Chengdu SICHUAN RIBAO in Chinese 11 Oct 81 p 2

[Article by Fu Rongzhou [9265 2837 0719]: "Revive the Farmland, Develop the Fertility of the Land, Seize a Bumber Harvest Next Year -- A Survey of How Mianyang Prefecture Solved the Problems of Flood-damaged Basic Building Blocks of Agricultural Production Such as Soil and Fertilizers"]

[Text] This year, Mianyang Prefecture suffered seriously from flood. Such basic building blocks of agricultural production as soil and fertilizers were severely destroyed. The top soil of 13.25 million mu of cultivated land throughout the prefecture was eroded to varying degrees. Of this area, 4 million mu suffered severe loss due to erosion. Nearly 400,000 mu of farmland were eroded to the point that large ditches and small ponds were formed. Several localities were covered by several chi of river sand and pebbles and silt. Parts of the land were eroded into shiny hardpan surfaces. According to surveys conducted by the soil fertility station in Jiange County, on slopes of 9 degrees with 20 percent plant cover, 1620 jin of top soil was washed away. On 9-degree slopes with a plant cover of less than 10 percent, ± 5951 jin of top soil was washed away, equivalent to ± 2 fen of land per mu. Throughout the prefecture, 10 million mu on which crops are sown in the spring had about 30 million cubic meters eroded away. Erosion of 1 chi [33.33 cm] thick layer of soil per mu is equivalent to a loss of 150,000 mu of cultivated land. The loss of fertilizer is similarly serious. Many manure pits in farm villages throughout the prefecture were damaged by flood water. There will be a lack of liquid manure next winter. Because of damage by flood water, compost is scarce. The stems of crops from 1 million mu of fields that did not produce a harvest throughout the prefecture means that 1 million mu of cultivated land will lack natural fertilizers. Because of less fertilizers, soil fertility drops; and the amount of fertilizers needed by the agricultural crops markedly increased. In face of the above situation, this prefecture is taking five measures to restore farmland and develop soil fertility.

I. Faced with a high water gable and high dampness in the soil moisture, the elimination of moisture damage and the improvement of low-yielding damp fields has been established as the central task this autumn. The work mainly involves digging ditches to drain flood water, to intercept springs, and to irrigate [bringing about] comprehensive control over tracts of lands, lowering the water table, intercepting the flow of mountain springs, and eliminating flood waters from the mountains. This will ensure that water will flow freely from the 2.4 million mu of diked wheat fields with drainage ditches and 1 million mu of main rape fields. The purpose is to dry the fields and strive for a bumber harvest.

II. Keeping in mind the causes of the flood damage, there are many wasy to restore the damaged farmland. Destructive floods are caused by atmospheric circulation and are also related to the destruction of forests and vegetation and the excessive narrowing of rivers. Therefore, while actively repairing water conservancy projects, flood prevention forest belts of palm grass, alder, willow, and false indigo should be planted along the banks of rivers. In the future, when building flood prevention projects in these forests, biological and engineering measures should be combined.

III. The river systems must be dredged and water and soil retention must be done well to solve the problems of loss of fertilizers and soil erosion. Methods to regulate rivers and watercourses which combine storage, drainage, and irrigation should be implemented according to the principle of first managing the ditches in order to manage the slopes. A river system of one mountain and one river should be zoned from top to bottom finding outlets for mountain water, establishing flood prevention measures in sections from the top of the mountain to the bottom, and digging ditches surrounding the mountain or restoring bei [5154] ditches. Water storage poods for use for drought should be dug at places where water from mountain slopes converge. In each ditch, more weirs and sand settling ponds should be left, first to stop sand and second to act as a buffer. Water should be drained by levels. More ditches should be built for running water. Sand should be intercepted in sections. Rapids should be changed to slow flowing streams. At the same time, large quantities of trees and grasses should be planted and cultivated. Qiao [0829], irrigation, and grasses should be combined. Firewood forests should be planted first and then timber forests. Use the firewood forests to protect the timber forests.

IV. Keeping in mind the causes for low yields, improve low-yielding fields while suiting measures to local conditions. Thin, infertile, damp, and muddy low-yielding fields constitute 50 percent of the land of the whole prefecture. In areas with a small percentage of double-cropped fields, some winter paddy fields should be improved. Where top soil has been seriously eroded due to major flooding, spread sand over the surface of the soil to thicken the soil layer. Where conditions permit, the soil can be brought to fields.

V. Faced with a lack of fertilizers, sources must be broadened to increase organic fertilizers. Fertilizer is an important material base for increasing agricultural production. Broadening the sources of fertilizers should be done by creating organic fertilizers. One way is to actively popularize efforts to increase the planting of green manure and interplanting and companion planting of green manure. The time after harvesting paddy rice should be utilized to add a crop of Chinese milk vetch, gan shui [6931 3055], Chinese trumpet creeper, sesbania, hudouqing [5170 6258 7230], and xiuo kuizi [1420 5525 1311]. The soil should be turned over and rolled for winter crop planting. Rows left vacant in the fields of winter crops should be utilized for companion planting of winter green manure. Chinese milk vetch can be test planted in rape fields.

The second is to combine the seedbeds with developing fertility and to appropriately expand the planting of green manure. This can not only increase fertilizers and develop fertility in seedbeds but also increase soil temperature. The third is to exert efforts to increase the unit yield of winter green manure. The fourth is to develop pink duckweed in a big way. It is both a fertilizer and a feed. It propagates rapidly, its yield is high, its fertilizing effect is good, its supply is timely, and its effect of improving the soil is visible.

At present, the broad rural areas in Mianyang Prefecture have included restoration of farmland and development of soil fertility within the managerial scope of the communes and brigades and have established production responsibility systems that are compatible with farmland construction. The counties of Guangyuan and Santai have all established a responsibility system for improving the fields and the soil, thereby promoting the development of farmland construction.

9296
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FALL AFFORESTATION REPORTED PROCEEDING WELL THROUGHOUT PROVINCE

Changdu SICHUAN RIBAO in Chinese 5 Nov 81 p 1

[Article: "This Fall, Our Province Has Already Forested Over 600,000 Mu"]

[Text] The localities in our province have seized the time to launch autumn afforestation and sapling cultivation activities. Incomplete statistics up to the last 10 days of October showed that over 600,000 mu have already been forested, over 510 million trees have been planted in land with four sides, over 1,300 kilometers of highways have been lined with trees, 400 kilometers of river banks have been forested, and over 800 ponds and reservoirs have been forested. The localities also have forested fast-growing bumper-harvest timber forests. The plan for the whole year was completed with a surplus during the first half of the year, and new autumn forestation of over 50,000 mu has been completed. Sapling cultivation has been completed on over 33,000 mu.

Autumn forestation this year was launched through in-depth implementation of the "Decision Concerning Several Problems in Protecting Forests and Developing Forestry," issued throughout the province by the Chinese Communist Party Central Committee and the State Council. The party and administrative leadership at each level conscientiously learned the lesson of floods, actively grasped implementation of the "two systems" in forestry, and mobilized the enthusiasm of all sectors in forestation. In the southern counties, everyone from the county party committee secretary to the commune members and masses took enthusiastic action this autumn and forested over 56,000 mu, constituting 43 percent of the [total] area of forestation in Nanchong Prefecture this autumn. Mianyang Prefecture popularized the experience of Shehong County in carrying out forestation within a limited period; communes and commune brigades in the county signed forestation contracts on a widespread basis, the responsibility system was implemented, inspection was strict, and rewards and punishments were carried out, effectively hastening forestation measures. The whole prefecture forested over 370,000 mu this autumn, constituting 61 percent of the area presently [forested] throughout the province.

At present, many localities are continuing forestation and at the same time are organizing forces to carry out inspection, implementation of responsibilities, signing contracts, establishing systems, and ensuring that the young forests and sapings can safely winter, in order to consolidate and develop the achievements of autumn forestation and sapling cultivation.

9296
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INCREASED FARM MACHINERY PURCHASES REPORTED

Beijing RENMIN RIBAO in Chinese 29 Oct 81 p 1

[Article: "Sudden Increase in Farm Machinery For More Than 2 Years in Xinjiang. Following Institution of System of Responsibility, Peasants Seek Greater Increases in Production"]

[Text] Following institution of systems of responsibility linking calculation of renumeration to output in rural areas of the Xinjiang-Uighur Autonomous Region, the peasants want more and better farm machinery in order to get greater increases in production. According to statistics from pertinent departments in the autonomous region, in the more than 2 years since implementation of systems of responsibility for production, remarkable increase has occurred in the amount of machine-powered farm equipment throughout the autonomous region, including a 69 percent increase in the number of tractors, and great increases in associated farm equipment as well. Such equipment includes a 32 percent increase in the number of seed drills, a 63.4 percent in combines, a doubling of small machine-drawn farm implements, and a 1.3-fold increase in farm trucks.

Xinjiang is one of the regions of the country where the extent of farm mechanization is fairly high, but the extent of mechanization is uneven. There is a fair amount of machinery for plowing and sowing, but other operations such as seed sorting, cultivation, weeding, fertilizer spreading, and harvesting mostly depend on hand labor. This not only hurts increases in output, particularly summer wheat harvests, which depend too much on human labor, but also hurts development of economic diversification. Consequently, the peasants would very much like to buy machinery urgently needed for production that is in short supply. In order to satisfy the peasants' desire for farm machinery, the autonomous region's farm machinery departments have bought from elsewhere 260 various types of cultivating machines, fertilizer spreaders, and harvesting combines. They have selected 40 sites in 12 prefectures and zhou to carry out technical promotion experiments, results of which have been very good.

9432
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TITLE: "Studies on In Vitro Induction of Callus From Embryo Sacs of Rice"

SOURCE: Beijing YICHUAN [HEREDITAS] in Chinese No 5, Sep 81 pp 10-12

ABSTRACT: Following the successful experiment of culturing a haploid plant in an unfertilized rice ovary (YICHUAN XUEBAO Vol 7 No 3, 1980,) further experiments are carried out in the summer of 1980 to study the factors influencing callus induction from the embryo sac of rice. This time the average induction frequency is 5.2 percent, with that of the geng varieties generally higher than the xian varieties. In a few ovaries, there are 2-5 calluses in each. Further study is needed to clarify this phenomenon. It appears that the most suitable induction time is the oogamete development stage and not the stage of macrospore occurrence. Without exogenous hormone, callus induction is very rare (only one in 19 geng ovaries) and the density of the exogenous hormone (MCPA) should be 0.125-0.5ppm. The favorable density of the cane sugar is 3-9 percent. The induction frequency of 4 inoculation methods is also compared.

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TITLE: "A Preliminary Study on Male-Sterility of Rapeseed Induced by Male-Gametocide No 1"

SOURCE: Beijing YICHUAN [HEREDITAS] in Chinese No 5, Sep 81 pp 15-17

ABSTRACT: In 1977-80, 3 breeds of rape of Brassica napus type are used in an experiment of chemical induction of male sterility. At first, 11 chemicals are tried, including Ethrel, chlorosulfonic acid, etc. to disclose that the best for the purpose is Male-gametocide No 1, which is a commercial product prepared by Guangdong Provincial Crop Heterosis Utilization Cooperative Group. During various stages of growth and development, the plants are sprayed varying number of times with the chemical of varying densities and anther samples are taken every 3 days and conditions of development of pollen mother cells and sporidium development are observed under a microscope. The composition of free amino acids in the anther are determined with thin-layer laminography and the intensity of anther respiration is determined by a respirator. Outstanding problems include the fact that the rate of successfully sterilized plants is not yet sufficiently stable and the fact that in a completely sterilized plant, there remain 9.3 percent active pollens and a certain ratio of self-crossed seeds will occur under natural conditions.

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TITLE: "Analysis of Peroxidase Isozymes in Anthers Cultured In Vitro and in Progenies of Pollen Plants of Corn"

SOURCE: Beijing YICHUAN [HEREDITAS] in Chinese No 5, Sep 81 pp 18-21

ABSTRACT: For the purpose of clarifying the different effects of peroxidase isoenzymes on different materials, the variation of the enzymes in the culture process, and their relationship in the genetic expressions of pollen progenies, several farm breeds of corn, uncultured and cultured anthers, and offsprings of anther plants are used in an experiment. Results demonstrate that the obvious difference of expression reflects the gene type difference of the materials and the difference in callus induction of different materials is possibly related to the type and activity of some isoenzymes. The peroxidase isoenzyme expressions of different offsprings of a single pollen plant remain basically identical to the 4th generation. This fact indicates that pollen plants are relatively stable, and the internal isoenzymic expression of pollen plants provides an evidence, beyond the uniformity of major economic properties, of the genetic stability of progenies of pollen plants.

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TITLE: "Induction of Callus From Leaf and Regeneration of Plantlet in Arachis hypogaea"

SOURCE: Beijing YICHUAN [HEREDITAS] in Chinese No 5, Sep 81 pp 22-24

ABSTRACT: Embryos of 4 peanut seeds supplied by the Department of Agriculture of the college are inoculated on MS medium without adding any hormone to culture at about 25°C in a room with natural light of about 5,000 lux in intensity. Sprouts are obtained in 2-3 weeks. The small leaves, about 1 cm in length,are removed and inoculated on a medium of MS + 4ppmNAA + 0.5ppm BA, with the pH adjusted to 5.8. The temperature is regulated to 25-30°C during the day and about 20°C at night. Fluorescent lamp of 1,500-2,000 lux is used for lighting, about 10 hours every day Calluses begin to form in 7-8 days. A total of 31 calluses are obtained from the 44 leaf-buds, amounting to an induction frequency of 70.4 percent. Attempts are being made to induce these calluses to form roots. Another experiment of callus induction of cotyledons is more successful; 90 plantlets are obtained from 104 cotyledons inoculated (93.7 percent) and from these one regenerated plantlet has been obtained. After 2 months of culture, it has developed 3 leaves and 4 blossoms which are identical in morphology and structure to those of ordinary peanut (Arachis hypogaea) plants except for being smaller. Photos of the regenerated plantlet are included.

6248
CSO: 4009/157

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TITLE: "Effect of Pig Housing on Feed Utilization by the Growth and Gain of Pigs"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 13, 20 Oct 81 pp 1-4

ABSTRACT: With the development of industrialized pig farming, attention has been given to environmental control as a means of further increasing the productivity of the pigs. In foreign countries there have been studies (Verstegen in 1978, Pond et al in 1974, etc.) on the relationship between weight gain and the atmospheric temperature, humidity, ventilation, lighting, noise level, etc. As industrialized pig farming is in a budding stage, the subject of optimal design of pig housing is very important. Experiments were carried out by the authors in Dec 78 to Mar 79 and again in May-Sep 79 to compare the ratio between feed consumption and weight gain of 2 herds housed in 2 different types of sties: the ordinary and the semi-mechanized. Results indicate that for every kg of weight gain the energy consumption varies between 100 and 85.5-88.3 percent for pigs of the 2 types of housing respectively. Of all the environmental factors, temperature appears to have the greatest effect.

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TITLE: "A Report on Leptospirosis of Domestic Animals in Shandong Province"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 13, 20 Oct 81 pp 23-26

ABSTRACT: The region of Yantai in Shandong has been endemic for human leptospirosis for several years and a great epidemic occurred in 1964. For the purpose of clarifying the source and pathways of infestation, the authors carried out a survey of the domestic animals of the region, emphasizing epidemiological, symptomatic, serological aspects and the work of isolating the pathogens. Results have verified the suspicion that pigs and domestic equine animals are the source of leptospirosis. Data of the various aspects of the study are reported.

6248
CSO: 4009/148

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TITLE: "Research on the Biomass of Short Cycle Logging of Poplars"

SOURCE: Beijing LINYE KEJI TONGXUN [FOREST SCIENCE AND TECHNOLOGY] in Chinese No 9, 10 Sep 81 pp 15-17

ABSTRACT: Short cycle logging is a technique of harvesting fast growing forests planted to supply pulp, feed, and fuel in 10 years or so and allowing the root system to realize renewal without further cultivation. There have been studies on the technique in N. American and European countries in the past decade. The USSR now has 200 factories making vitamin powders from tree leaves. Starting in 1979, the authors have studied the biomass yield of 4 species of poplar. The yield of dry material of all 4 species is found to be above 13-15 tons/hectare, but that of one species is 8-16 percent greater than that of the other three. The ratio of leaves, branches, and bark varies with the species in a range of 15-21 percent for leaves and 19-26 percent for the bark. If short cycle logging is to provide raw materials for fiber industries, some species should be preferred. Equations used to calculate the leaf area, the weight of the above ground materials, the relationship between the biomass yield and the height and circumference of the trees of different species of poplar are explained.

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TITLE: "Experimental Application of Group Genetics in Forest Cultivation and Logging"

SOURCE: Beijing LINYE KEJI TONGXUN [FOREST SCIENCE AND TECHNOLOGY] in Chinese No 9, 10 Sep 81 pp 18-20

ABSTRACT: Within a single species of trees, characteristics of individuals may vary a great deal to reflect difference in growth. In 1974, the authors observed the bark of a grove of Japanese larch and discovered 3 different types. The average circumference and height as well as the timber accumulation also varied with the types of bark. If artificial cultivation technique is adopted to control the gene type of the individuals it should, therefore, be possible to improve the productivity of the forest. An attempt is made to calculate the number of generations needed to eliminate the undesirable gene types. It appears to be possible to reduce the undesirable genes to a minimum in 7 years if selective logging and cultivation technique is employed in every generation while at the same time the forest productivity may be improved in every generation also.

6248
CSO: 4009/158

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TITLE: "On the Method of Determining the Saline Tolerance of Crops During the Seedling Stage in the Coastal Region of Jiangsu"

SOURCE: Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 5, 5 Oct 81 pp 4-7

ABSTRACT: The coastal region of Jiangsu is an important cotton and grain producing area but the fields commonly contain easily soluble salts, primarily sodium chloride, affecting the normal growth of crops and presenting a great threat to agricultural production. There are many foreign studies on saline tolerance indices of crops and a great deal of work has been performed on the subject by Chinese scientists as well. Due to limitations of conditions in China, most studies are done with the water extract method which does not clarify the condition of distribution of salts in soil in solid and liquid phases. In 1973-74, the author and colleagues used the soil solution method to observe the saline tolerance of several major crops, including cotton, wheat, Seshania carmabina, and Vicia hirsuta, in their seedling stage. When results of the study are compared with results of water extract tests, it appears that due to the voluminous rainfall of the region (800-1000mm) solid phase salts are usually not observed in the fields and results of the 2 techniques are very close. It would not be so in arid regions such as Xinjiang Province, however.

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TITLE: "Selection of Optimal Wave Band in Remote Sensing of Soils"

SOURCE: Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 5, 5 Oct 81 pp 17-18

ABSTRACT: The principle of selecting a wave band in remote sensing should be the maximum differentiation of various ground surface materials and minimum dispersion among individual objects so that the data obtained would contain the richest information and repetition and mutual interference are at a minimum. Based upon this principle, 2 methods are generally adopted to select the optimal wave band for remote sensing of soils: the visual comparison method and the mathematical statistic analysis method. These 2 methods are briefly introduced. A spectral experiment area was set up in Tengchong of Yunnan Province, about 2.5 km^2, to observe 9 landscape types of soils in the area. The wave band selected with the statistic analysis method (600-700 and 700-800 $m\mu$) are proved to be the best. The colored infrared pictures are very readable although such factors as atmospheric transmission, detector response, etc. cannot yet be taken into consideration due to limitations of the instrument condition.

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TITLE: "An Investation on the Nutrient Conditions Responsible for Retardation of Early Rice in Yueyang Area"

SOURCE: Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 5, 5 Oct 81 pp 19-21

ABSTRACT: In the past several years, the phenomenon of arrested growth has repeatedly appeared over large areas of early rice soon after transplanting on the Dongtinghu plain and its eastern hills. In 1980, the symptom occurred to 80 thousand mu in Huarong County alone, for example,to cause serious yield reduction for the prefecture. Analyses of the plants and the soils indicate a deficiency of fast acting phosphorus. The iron phosphate content of paddies of retarded early rice is especially low and the phosphate content is in a locked in state to cause it to be unavailable to the crops. Applications of ammonium phosphate or calcium perphosphate produced very good results. Heavy application of fast phosphorus in seedbeds to produce strong seedlings of high phosphorus content can also produce good result of preventing retardation.

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TITLE: "Index of Boron Deficiency and Adequacy Prediction for Other Trace Elements of Soils in Areas of Spring Wheat Infertility in Northeast China"

SOURCE: Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 5, 5 Oct 81 pp 22-24

ABSTRACT: In recent years, the phenomenon of spring wheat infertility has been repeatedly reported in Nunjiang and Mudanjiang regions of Heilongjiang Province and Baicheng of Kirin Province, etc. The yield reduction may reach 20-50 percent, and above 70 percent in some severe cases. Some experimental studies have since proved that the major cause is boron deficiency of soil and application of boron fertilizer has produced obvious results in these areas. This paper reports follow-up studies on the condition of trace elements of soils of the areas of spring wheat infertility. Emission spectrum and atomic absorption spectrophotometric determination methods are used to determine the boron, copper, manganese, effective zinc, and iron contents of the soil specimens. Soils of varying boron contents of 0.10-0.37 ppm are used for experimental cultivation of spring wheat. Results disclose that when the boron content is above 0.25ppm, infertile wheat plants do not occur; when the boron content is less than 0.10ppm, 80 percent of the spring wheat spikes will have no seeds. The critical value of the boron content appears to vary a great deal with the breed as well as the weather condition, however.

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